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In cooperation with  
New Jersey Agricultural  
Experiment Station;  
Rutgers, The State  
University of New Jersey;  
New Jersey Department of  
Agriculture, the State Soil  
Conservation Committee;  
Sussex County Soil  
Conservation District; and  
Delaware Water Gap  
National Recreation Area

# Soil Survey of Sussex County, New Jersey





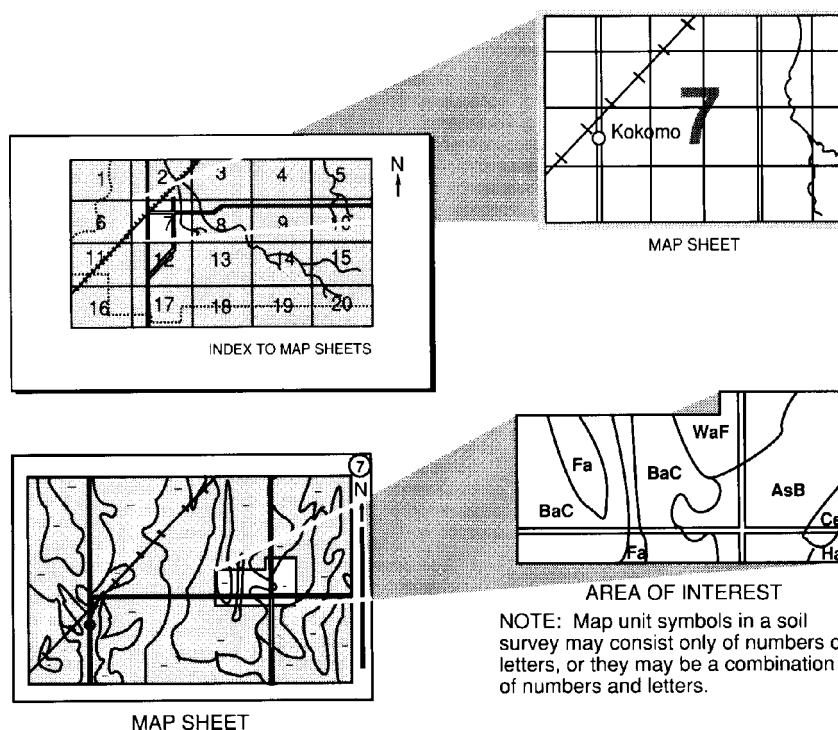
# How To Use This Soil Survey

The detailed soil maps can be useful in planning the use and management of small areas.

To find information about your area of interest, locate that area on the [Index to Map Sheets](#). Note the number of the map sheet and turn to that sheet.

Locate your area of interest on the map sheet. Note the map unit symbols that are in that area. Turn to the **Contents**, which lists the map units by symbol and name and shows the page where each map unit is described.

The **Contents** shows which table has data on a specific land use for each detailed soil map unit. Also see the **Contents** for sections of this publication that may address your specific needs.



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This soil survey is a publication of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies The Natural Resources Conservation Service (formerly the Soil Conservation Service) has leadership for the Federal part of the National Cooperative Soil Survey. This survey was made cooperatively by the Natural Resources Conservation Service and the New Jersey Agricultural Experiment Station; Rutgers, The State University of New Jersey; New Jersey Department of Agriculture, State Soil Conservation Committee; the Sussex County Soil Conservation District; and the Delaware Water Gap National Recreation Area. The survey is part of the technical assistance furnished to the Sussex County Soil Conservation District. The Sussex County Board of Commissioners provided financial assistance for the survey.

Major fieldwork for this soil survey was completed in 2002. Soil names and descriptions were approved in 2002. Unless otherwise indicated, statements in this publication refer to conditions in the survey area in 2002. The most current official data are available on the Internet.

Soil maps in this survey may be copied without permission. Enlargement of these maps, however, could cause misunderstanding of the detail of mapping. If enlarged, maps do not show the small areas of contrasting soils that could have been shown at a larger scale.

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**Cover:** A view of the Kittatinny Valley of Sussex County from the summit of Sunrise Mountain, part of Kittatinny Mountain. The plateau of the New Jersey "Highlands" is in the background.

*Additional information about the Nation's natural resources is available online from the Natural Resources Conservation Service at <http://www.nrcs.usda.gov>.*



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# Foreword

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Soil surveys contain information that affects land use planning in survey areas. They include predictions of soil behavior for selected land uses. The surveys highlight soil limitations, improvements needed to overcome the limitations, and the impact of selected land uses on the environment.

Soil surveys are designed for many different users. Farmers, foresters, and agronomists can use the surveys to evaluate the potential of the soil and the management needed for maximum food and fiber production. Planners, community officials, engineers, developers, builders, and home buyers can use the surveys to plan land use, select sites for construction, and identify special practices needed to ensure proper performance. Conservationists, teachers, students, and specialists in recreation, wildlife management, waste disposal, and pollution control can use the surveys to help them understand, protect, and enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. The information in this report is intended to identify soil properties that are used in making various land use or land treatment decisions. Statements made in this report are intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

These and many other soil properties that affect land use are described in this soil survey. The location of each soil is shown on the detailed soil maps. Each soil in the survey area is described, and information on specific uses is given. Help in using this publication and additional information are available at the local office of the Natural Resources Conservation Service or Rutgers Cooperative Extension.

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# Soil Survey of Sussex County, New Jersey

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Soils surveyed by Richard K. Shaw and Frederick C. Schoenagel III  
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in cooperation with  
New Jersey Agricultural Experiment Station; Rutgers, The State University of New  
Jersey; New Jersey Department of Agriculture, State Soil Conservation Committee;  
the Sussex County Soil Conservation District; and the Delaware Water Gap National  
Recreation Area.

## Introduction

SUSSEX COUNTY is the northernmost county in New Jersey ([fig. 1](#)). It is bordered by the Delaware River and Pennsylvania to the northwest, New York to the northeast, and the New Jersey counties of Warren County to the southwest, Passaic County to the southeast, and Morris County to the south. The total land area of the county is approximately 343,700 acres. The county seat is the town of Newton.

This soil survey is an update to a survey of Sussex County published by the USDA, Soil Conservation Service in August 1975 (USDA, 1975). This update provides a digital soil survey on orthophotography and contains additional interpretative information.

## General Nature of the Survey Area

This section provides general information about the survey area. It describes the climate, physiography, and drainage of the county.

## Climate

Prepared by the Natural Resources Conservation Service National Water and Climate Center, Portland, Oregon.

The climate tables were created from data recorded at climate station Newton, St. Paul's Abbey, New Jersey.

[Table 1](#) gives data on temperature and precipitation for the survey area as recorded at St. Paul's Abbey in the period 1971 to 2000. [Table 2](#) shows probable dates of the first freeze in fall and the last freeze in spring. [Table 3](#) provides data on the length of the growing season.

Thunderstorm days, relative humidity, percent sunshine, and wind information are estimated from First Order station Newark, New Jersey.



**Figure 1.—Location of Sussex County in New Jersey.**

In winter, the average temperature is 27.0 degrees F and the average daily minimum temperature is 17.1 degrees. The lowest temperature on record, which occurred at Newton, St. Paul's Abbey on January 21, 1994, was -26 degrees. In summer, the average temperature is 68.7 degrees and the average daily maximum temperature is 80.7 degrees. The highest temperature, which occurred at Newton, St. Paul's Abbey on September 3, 1953, was 104 degrees.

Growing degree days are shown in the table ["Temperature and Precipitation"](#). They are equivalent to "heat units". During the month, growing degree days accumulate by the amount that the average temperature each day exceeds a base temperature (50 degrees F). The normal monthly accumulation is used to schedule single or successive plantings of a crop between the last freeze in spring and the first freeze in fall.

The average annual total precipitation is about 47.57 inches. Of this, about 22.35 inches, or 47 percent, usually falls in May through September. The growing season for most crops falls within this period. The heaviest 1-day rainfall during the period of record was 6.70 inches at Newton, St. Paul's Abbey on August 19, 1955. Thunderstorms occur on about 26 days each year, and most occur between May and August.

The average seasonal snowfall is 37.5 inches. The greatest snow depth at any one time during the period of record was 40 inches recorded on January 9, 1996. On

average, 42 days per year have at least 1 inch of snow on the ground. The heaviest 1-day snowfall on record was 24.0 inches recorded on January 8, 1996.

The average relative humidity in mid-afternoon is about 50 percent. Humidity is higher at night, and the average at dawn is about 65 percent in April and 75 percent in late summer. The sun shines about 62 percent of the time in summer and about 48 percent in winter. The prevailing wind is from the southwest in most months, except from the northwest in the late winter and early spring. Average wind speed is highest, around 12 miles per hour, in March.

## **Physiography**

Sussex County lies within two physiographic provinces of the Appalachian Highlands physiographic division: the Middle section of the Valley and Ridge Province and the New England upland section of the New England Province (Fenneman and others, 1946).

The Valley and Ridge Province makes up approximately the western two-thirds of Sussex County, and is broken up geographically west to east into the Upper Delaware Valley, Kittatinny Mountain, and Kittatinny Valley.

Adjacent to the Delaware River is the Upper Delaware Valley, also called the Minisink Valley. Elevations in this valley range from approximately 300 to 500 feet above sea level. Running through the middle of this valley is a high narrow longitudinal ridge called the Wallpack Ridge, which rises approximately 500 to 800 feet above sea level.

Kittatinny Mountain separates the Upper Delaware Valley from the Kittatinny Valley. It is a prominent longitudinal ridge with summit elevations that range from approximately 1,200 to 1,800 feet above sea level, and attains a maximum elevation of 1,803 feet at High Point. The highest elevations in Sussex County, and in New Jersey, are found on Kittatinny Mountain.

The Kittatinny Valley is dominated by rolling hills and relatively flat valley bottoms. Elevations in this valley range from approximately 400 to 1,000 feet above sea level.

The eastern third of Sussex County lies within the New England upland section of the New England Province, referred to in New Jersey as the "Highlands". The Highlands are made up of a mountain range consisting of a nearly continuous plateau with a broad summit that varies between relatively flat and gently rolling topography. Elevations in the Highlands range between 1,000 to slightly less than 1,500 feet above sea level.

## **Drainage**

The Upper Delaware Valley in Sussex County is drained by the Delaware River and its tributaries, Flat Brook and Mill Brook. The Kittatinny Valley is drained to the south by the Paulins Kill and the Pequest River, and drained to the north by the Wallkill River and its tributaries, Papakating and Pochuck Creeks. The Highlands part of Sussex County is drained to the east by the Pequannock River, and drained to the south by the Musconetcong River and its tributary, Lubbers Run (USDA, 1975).

## **How This Survey Was Made**

This survey was made to provide information about the soils and miscellaneous areas in the survey area. The information includes a description of the soils and miscellaneous areas and their location and a discussion of their suitability, limitations, and management for specified uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They dug many holes to study the soil profile,

which is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

The soils and miscellaneous areas in the survey area are in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and



identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

The descriptions, names, and delineations of the soils in this survey area do not fully agree with those of the soils in adjacent survey areas. Differences are the result of a better knowledge of soils, modifications in series concepts, or variations in the intensity of mapping or in the extent of the soils in the survey areas.

## Survey Procedures

The general procedures followed in making this survey are described in the "National Soil Survey Handbook" of the Natural Resources Conservation Service and in the "Soil Survey Manual" (USDA, Title 430-VI; Soil Survey Division Staff, 1993).

Before the fieldwork began, preliminary boundaries of slopes and landforms were plotted stereoscopically on aerial photographs taken in 1991 at a scale of 1:24,000. Soil scientists studied U.S. Geological Survey topographic maps, at a scale of 1:24,000, to relate land and image features. New Jersey Geological Survey bedrock and surficial geology maps at scales ranging from 1:24,000 to 1:100,000 were used to establish soil-parent material relationships. The previous soil survey of Sussex County, published in 1975 (USDA, 1975), was also used as a reference, as was its predecessor, the "Soil Survey of the Sussex Area", published in 1914 (Jennings and others, 1914). Reconnaissance was made by vehicle before the landscape was traversed on foot.

Sample areas were selected that represented the major landscapes in the county. These areas were investigated more closely than the rest of the county in order for the soil scientists to establish a landscape model of each landscape found in the county. Extensive notes were taken on the composition of map units in these preliminary study areas. As mapping progressed, these preliminary notes were modified and a final assessment of the composition of the individual map units was made. Most of the field data collected for these sample areas was in the form of 10-point transects. In areas where the soil pattern was very complex, such as where the Farmington and Galway soils were mapped, distances between transect points were less than 150 feet. In areas where the soil pattern was relatively simple, such as where the Swartswood and Venango soils were mapped, transect points were spaced about 150 feet or more apart.

Observations of such items as landforms, tree-tips, vegetation, roadbanks, and animal burrows were made without regard to spacing. Soil boundaries were determined on the basis of soil examinations, observations, and photo interpretation. The soil material was examined with the aid of a hand auger or a spade to a depth of about 5 feet or to bedrock within a depth of 5 feet. The pedons described as typical were observed and studied in pits that were dug with shovels and spades.

Samples for chemical and physical analyses and for analyses of engineering properties were taken from representative sites of several of the soils in the survey area. The chemical and physical analyses were made by the National Soil Survey Center, USDA-NRCS, Lincoln, Nebraska. The results of the analyses are stored in a computerized data file at the laboratory. A description of the laboratory procedures can be obtained on request from this laboratory (USDA, 1996).



## Detailed Soil Map Units

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The map units delineated on the detailed soil maps in this survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions in this section, along with the maps, can be used to determine the suitability and potential of a unit for specific uses. They also can be used to plan the management needed for those uses.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. The contrasting components are mentioned in the map unit descriptions. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives the principal hazards and limitations to be considered in planning for specific uses.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the

detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Swartswood loam, 0 to 8 percent slopes, extremely stony, is a phase of the Swartswood series (fig 2).

Some soil series occur only as minor components in map units. For example, the Hero series only occurs in this survey as a minor component in the map units FrdAb, Fredon-Halsey complex, 0 to 3 percent slopes, very stony, and HdxAb, Hazen-Hoosic complex, 0 to 3 percent slopes, very stony. Therefore, no series description is provided in the section "Classification of the Soils".

Some map units are made up of two or more major soils or miscellaneous areas. These map units are called complexes.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Rock outcrop-Farmington-Galway complex, 15 to 35 percent slopes, is an example.

This survey includes *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Pits, sand and gravel, is an example.

Table 4 lists the map units in this survey area. Other tables give properties of the soils and the limitations, capabilities, and potentials for many uses. The Glossary defines many of the terms used in describing the soils.

## **AhbBc—Alden silt loam, 0 to 8 percent slopes, extremely stony**

### ***Map Unit Setting***

*Slope:* nearly level to gently sloping

*Landscape:* till plains

*Landform:* depressions

*Surface cover:* 3 to 14 percent stones

### ***Map Unit Composition***

*Alden and similar soils:* 90 percent

*Minor components:* 10 percent

### ***Description of Alden and similar soils***

The typical sequence, depth, and composition of the layers of the soil are as follows—

#### ***Surface layer:***

Oi—0 to 2 inches; slightly decomposed plant material

A—2 to 7 inches; silt loam

#### ***Subsoil layer:***

Bg1—7 to 14 inches; silt loam

Bg2—14 to 28 inches; silty clay loam

Bg3—28 to 43 inches; loam

#### ***Substratum:***

C—43 to 60 inches; silt loam

### **Properties and Qualities**

*Drainage class:* very poorly drained

*Parent material:* silty colluvium derived from sandstone over fine-loamy till derived from sandstone



Figure 2.—An area of Swartswood loam, 0 to 8 percent slopes, extremely stony, a phase of the Swartswood soil series found near Kittatinny Mountain.

*Permeability:* slow to moderate

*Available water capacity:* high

*Reaction:* very strongly acid to moderately alkaline

*Ponding depth:* 0 to 12 inches above surface

*Depth to high water table:* 0 inches

#### **Interpretative Groups**

*Land capability classification (non-irrigated):* 7s

*Hydrologic group:* D

#### **Minor Components**

- Very deep, poorly drained Chippewa soils

### **AhcBc—Alden mucky silt loam, gneiss till substratum, 0 to 8 percent slopes, extremely stony**

#### **Map Unit Setting**

*Slope:* nearly level to gently sloping

*Landscape:* till plains

*Landform:* depressions

*Surface cover:* 3 to 14 percent stones

#### **Map Unit Composition**

*Alden, gneiss till substratum, and similar soils:* 90 percent

*Minor components:* 10 percent

### ***Description of Alden, gneiss till substratum, and similar soils***

The typical sequence, depth, and composition of the layers of the soil are as follows—

*Surface layer:*

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 9 inches; mucky silt loam

*Subsoil layer:*

Bg1—9 to 23 inches; silty clay loam

Bg2—23 to 35 inches; silty clay loam

*Substratum:*

C—35 to 60 inches; silty clay loam

### **Properties and Qualities**

*Drainage class:* very poorly drained

*Parent material:* silty colluvium derived from granite and gneiss over fine-loamy till  
derived from granite and gneiss

*Permeability:* slow to moderate

*Available water capacity:* high

*Reaction:* very strongly acid to moderately alkaline

*Ponding depth:* 0 to 12 inches above surface

*Depth to high water table:* 0 inches

### **Interpretative Groups**

*Land capability classification (non-irrigated):* 7s

*Hydrologic group:* D

### ***Minor Components***

- Very deep, somewhat poorly drained Hibernia soils

## **AruCh—Arnot-Lordstown complex, 0 to 15 percent slopes, very rocky**

### ***Map Unit Setting***

*Slope:* nearly level to strongly sloping

*Landscape:* mountains

*Landform:* ground moraines

*Surface cover:* 15 to 49 percent stones

### ***Map Unit Composition***

*Arnot and similar soils:* 55 percent

*Lordstown and similar soils:* 40 percent

*Minor components:* 5 percent

### ***Description of Arnot and similar soils***

The typical sequence, depth, and composition of the layers of the soil are as follows—

*Surface layer:*

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 2 inches; loam



*Subsurface layer:*

E—2 to 3 inches; fine sandy loam

*Subsoil layer*

Bhs—3 to 4 inches; fine sandy loam

Bw1—4 to 12 inches; very gravelly loam

Bw2—12 to 17 inches; extremely gravelly loam

*Substratum:*

2R—17 inches; bedrock

**Properties and Qualities***Drainage class:* somewhat excessively drained*Parent material:* loamy till derived from conglomerate*Permeability:* moderate or moderately rapid*Available water capacity:* very low*Reaction:* extremely acid to moderately acid*Depth to restrictive feature:* 10 to 20 inches to bedrock (lithic)*Depth to high water table:* greater than 6 feet**Interpretative Groups***Land capability classification (non-irrigated):* 7s*Hydrologic group:* D***Description of Lordstown and similar soils***

The typical sequence, depth, and composition of the layers of the soil are as follows—

*Surface layer:*

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 2 inches; loam

*Subsurface layer:*

E—2 to 3 inches; fine sandy loam

*Subsoil layer:*

Bw1—3 to 5 inches; loam

Bw2—5 to 17 inches; gravelly loam

Bw3—17 to 22 inches; gravelly loam

*Substratum:*

C—22 to 36 inches; very gravelly fine sandy loam

2R—36 inches; bedrock

**Properties and Qualities***Drainage class:* well drained*Parent material:* coarse-loamy till derived from conglomerate*Permeability:* moderate*Available water capacity:* low*Reaction:* very strongly acid to moderately acid*Depth to restrictive feature:* 20 to 40 inches to bedrock (lithic)*Depth to high water table:* greater than 6 feet**Interpretative Groups***Land capability classification (non-irrigated):* 7s*Hydrologic group:* C***Minor Components***

- Rock outcrop

## **ArvD—Arnot-Lordstown-Rock outcrop complex, 15 to 35 percent slopes**

### ***Map Unit Setting***

*Slope:* moderately steep or steep

*Landscape:* mountains

*Landform:* ground moraines

*Surface cover:* 15 to 49 percent stones

### ***Map Unit Composition***

*Arnot and similar soils:* 45 percent

*Lordstown and similar soils:* 40 percent

*Rock outcrop and similar soils:* 15 percent

### ***Description of Arnot and similar soils***

The typical sequence, depth, and composition of the layers of the soil are as follows—

#### *Surface layer:*

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 2 inches; loam

#### *Subsurface layer:*

E—2 to 3 inches; fine sandy loam

#### *Subsoil layer:*

Bhs—3 to 4 inches; fine sandy loam

Bw1—4 to 12 inches; very gravelly loam

Bw2—12 to 17 inches; extremely gravelly loam

#### *Substratum:*

2R—17 inches; bedrock

### **Properties and Qualities**

*Drainage class:* somewhat excessively drained

*Parent material:* loamy till derived from conglomerate

*Permeability:* moderate or moderately rapid

*Available water capacity:* very low

*Reaction:* extremely acid to moderately acid

*Depth to restrictive feature:* 10 to 20 inches to bedrock (lithic)

*Depth to high water table:* greater than 6 feet

### **Interpretative Groups**

*Land capability classification (non-irrigated):* 7s

Hydrologic group: D

### ***Description of Lordstown and similar soils***

The typical sequence, depth, and composition of the layers of the soil are as follows—

#### *Surface layer:*

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 2 inches; loam

#### *Subsurface layer:*

E—2 to 3 inches; fine sandy loam

*Subsoil layer:*

Bw1—3 to 5 inches; loam

Bw2—5 to 17 inches; gravelly loam

Bw3—17 to 22 inches; gravelly loam

*Substratum:*

C—22 to 36 inches; very gravelly fine sandy loam

2R—36 inches; bedrock

**Properties and Qualities**

*Drainage class:* well drained

*Parent material:* coarse-loamy till derived from conglomerate

*Permeability:* moderate

*Available water capacity:* low

*Reaction:* very strongly acid to moderately acid

*Depth to restrictive feature:* 20 to 40 inches to bedrock (lithic)

*Depth to high water table:* greater than 6 feet

**Interpretative Groups**

*Land capability classification (non-irrigated):* 7s

*Hydrologic group:* C

***Description of Rock outcrop***

Rock outcrop typically consists of bedrock exposed at the surface. A description of this component is not provided.

**Properties and Qualities**

*Depth to restrictive feature:* 0 inches to bedrock (lithic)

**Interpretative Groups**

*Land capability classification (non-irrigated):* 8s

*Hydrologic group:* D

**ArvE—Arnot-Lordstown-Rock outcrop complex, 35 to 60 percent slopes*****Map Unit Setting***

*Slope:* steep to very steep

*Landscape:* mountains

*Landform:* ground moraines

*Surface cover:* 15 to 49 percent stones

***Map Unit Composition***

*Arnot and similar soils:* 60 percent

*Lordstown and similar soils:* 25 percent

*Rock outcrop and similar soils:* 15 percent

***Description of Arnot and similar soils***

The typical sequence, depth, and composition of the layers of the soil are as follows—

*Surface layer:*

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 2 inches; loam

*Subsurface layer:*

E—2 to 3 inches; fine sandy loam

*Subsoil layer:*

Bhs—3 to 4 inches; fine sandy loam

Bw1—4 to 12 inches; very gravelly loam

Bw2—12 to 17 inches; extremely gravelly loam

*Substratum:*

2R—17 inches; bedrock

**Properties and Qualities**

*Drainage class:* somewhat excessively drained

*Parent material:* loamy till derived from conglomerate

*Permeability:* moderate or moderately rapid

*Available water capacity:* very low

*Reaction:* extremely acid to moderately acid

*Depth to restrictive feature:* 10 to 20 inches to bedrock (lithic)

*Depth to high water table:* greater than 6 feet

**Interpretative Groups**

*Land capability classification (non-irrigated):* 7s

*Hydrologic group:* D

***Description of Lordstown and similar soils***

The typical sequence, depth, and composition of the layers of the soil are as follows—

*Surface layer:*

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 2 inches; loam

*Subsurface layer:*

E—2 to 3 inches; fine sandy loam

*Subsoil layer:*

Bw1—3 to 5 inches; loam

Bw2—5 to 17 inches; gravelly loam

Bw3—17 to 22 inches; gravelly loam

*Substratum:*

C—22 to 36 inches; very gravelly fine sandy loam

2R—36 inches; bedrock

**Properties and Qualities**

*Drainage class:* well drained

*Parent material:* coarse-loamy till derived from conglomerate

*Permeability:* moderate

*Available water capacity:* low

*Reaction:* very strongly acid to moderately acid

*Depth to restrictive feature:* 20 to 40 inches to bedrock (lithic)

*Depth to high water table:* greater than 6 feet

**Interpretative Groups**

*Land capability classification (non-irrigated):* 7s

*Hydrologic group:* C

***Description of Rock outcrop***

Rock outcrop typically consists of bedrock exposed at the surface. A description of this component is not provided.

**Properties and Qualities**

*Depth to restrictive feature: 0 inches to bedrock (lithic)*

**Interpretative Groups**

*Land capability classification (non-irrigated): 8s*

*Hydrologic group: D*

**AtcA—Atherton mucky silt loam, 0 to 3 percent slopes*****Map Unit Setting***

*Slope: nearly level*

*Landscape: river valley*

*Landform: depressions*

***Map Unit Composition***

*Atherton, very poorly drained, and similar soils: 60 percent*

*Atherton, poorly drained, and similar soils: 30 percent*

*Minor components: 10 percent*

***Description of Atherton, very poorly drained and similar soils***

The typical sequence, depth, and composition of the layers of the soil are as follows—

***Surface layer:***

Oi—0 to 2 inches; slightly decomposed plant material

Oe—2 to 4 inches; moderately decomposed plant material

A—4 to 8 inches; mucky silt loam

***Subsoil layer:***

Bg1—8 to 10 inches; silt loam

Bg2—10 to 18 inches; silt loam

Bg3—18 to 29 inches; silt loam

BC1—29 to 32 inches; silt loam

BC2—32 to 41 inches; silt loam

***Substratum:***

C1—41 to 45 inches; fine sandy loam

C2—45 to 50 inches; loam

C3—50 to 60 inches; very fine sandy loam

C4—60 to 70 inches; fine sandy loam

**Properties and Qualities**

*Drainage class: very poorly drained*

*Parent material: post glacial fine-silty alluvium*

*Permeability: moderately slow to moderately rapid*

*Available water capacity: high*

*Reaction: strongly acid to slightly alkaline*

*Ponding depth: 0 to 6 inches above surface*

*Depth to high water table: 0 inches*

**Interpretative Groups**

*Land capability classification (non-irrigated): 4w*

*Hydrologic group: B/D*

### ***Description of Atherton, poorly drained and similar soils***

The typical sequence, depth, and composition of the layers of the soil are as follows—

*Surface layer:*

A—0 to 6 inches; loam

*Subsoil layer:*

Bg1—6 to 12 inches; loam

Bg2—12 to 30 inches; loam

*Substratum:*

2Cg1—30 to 40 inches; sandy clay loam

2Cg2—40 to 60 inches; sandy clay loam

### **Properties and Qualities**

*Drainage class:* poorly drained

*Parent material:* post glacial fine-silty alluvium

*Permeability:* moderately slow to moderately rapid

*Available water capacity:* moderate

*Reaction:* strongly acid to slightly alkaline

*Depth to high water table:* 0 to 6 inches

### **Interpretative Groups**

*Land capability classification (non-irrigated):* 4w

*Hydrologic group:* B/D

### ***Minor Components***

- Very deep, somewhat poorly drained Aeris Endoaquepts, postglacial alluvium soils

## **CatbA—Catden mucky peat, 0 to 2 percent slopes**

### ***Map Unit Setting***

*Slope:* nearly level

*Landscape:* till plains

*Landform:* depressions

### ***Map Unit Composition***

*Catden and similar soils:* 85 percent

*Minor components:* 15 percent

### ***Description of Catden and similar soils***

The typical sequence, depth, and composition of the layers of the soil are as follows—

*Surface layer:*

Oe—0 to 2 inches; mucky peat

Oa1—2 to 13 inches; muck

Oa2—13 to 20 inches; woody muck

Oa3—20 to 32 inches; muck

Oa4—32 to 60 inches; muck

### **Properties and Qualities**

*Drainage class:* very poorly drained

*Parent material:* herbaceous and/or woody organic material

*Permeability:* moderately slow to moderately rapid

*Available water capacity:* very high



*Reaction:* very strongly acid to neutral

*Ponding depth:* 0 to 12 inches above surface

*Depth to high water table:* 0 inches

**Interpretative Groups**

*Land capability classification (non-irrigated):* 5w

*Hydrologic group:* B/D

**Minor Components**

- Very deep, very poorly drained Alden soils
- Very deep, very poorly drained Wallkill soils

**ChkC—Chatfield-Hollis-Rock outcrop complex, 0 to 15 percent slopes**

**Map Unit Setting**

*Slope:* nearly level to strongly sloping

*Landscape:* mountains

*Landform:* ground moraines

*Surface cover:* 15 to 49 percent stones

**Map Unit Composition**

*Chatfield and similar soils:* 45 percent

*Hollis and similar soils:* 30 percent

*Rock outcrop and similar soils:* 25 percent

**Description of Chatfield and similar soils**

The typical sequence, depth, and composition of the layers of the soil are as follows—

*Surface layer:*

Oi—0 to 1 inch; slightly decomposed plant material

Oa—1 to 3 inches; highly decomposed plant material

A—3 to 5 inches; cobbly loam

*Subsoil layer:*

Bw1—5 to 10 inches; cobbly loam

Bw2—10 to 24 inches; cobbly sandy loam

BC—24 to 30 inches; cobbly sandy loam

*Substratum:*

2R—30 inches; bedrock

**Properties and Qualities**

*Drainage class:* well drained

*Parent material:* coarse-loamy till derived from granite and gneiss

*Permeability:* moderate or moderately rapid

*Available water capacity:* low

*Reaction:* very strongly acid to moderately acid

*Depth to restrictive feature:* 20 to 40 inches to bedrock (lithic)

*Depth to high water table:* greater than 6 feet

**Interpretative Groups**

*Land capability classification (non-irrigated):* 7s

*Hydrologic group:* C

### ***Description of Hollis and similar soils***

The typical sequence, depth, and composition of the layers of the soil are as follows—

*Surface layer:*

Oi—0 to 1 inch; slightly decomposed plant material  
Oa—1 to 3 inches; highly decomposed plant material  
A—3 to 6 inches; cobbly loam

*Subsoil layer:*

Bw1—6 to 8 inches; cobbly loam  
Bw2—8 to 16 inches; gravelly sandy loam

*Substratum:*

2R—16 inches; bedrock

#### **Properties and Qualities**

*Drainage class:* well drained

*Parent material:* loamy till derived from granite and gneiss

*Permeability:* moderate or moderately rapid

*Available water capacity:* very low

*Reaction:* very strongly acid to moderately acid

*Depth to restrictive feature:* 10 to 20 inches to bedrock (lithic)

*Depth to high water table:* greater than 6 feet

#### **Interpretative Groups**

*Land capability classification (non-irrigated):* 7s

*Hydrologic group:* D

### ***Description of Rock outcrop***

Rock outcrop typically consists of bedrock exposed at the surface. A description of this component is not provided.

#### **Properties and Qualities**

*Depth to restrictive feature:* 0 inches to bedrock (lithic)

#### **Interpretative Groups**

*Land capability classification (non-irrigated):* 8s

*Hydrologic group:* D

## **ChkE—Chatfield-Hollis-Rock outcrop complex, 35 to 60 percent slopes**

### ***Map Unit Setting***

*Slope:* steep or very steep

*Landscape:* mountains

*Landform:* ground moraines

*Surface cover:* 15 to 49 percent stones

### ***Map Unit Composition***

*Chatfield and similar soils:* 45 percent

*Hollis and similar soils:* 30 percent

*Rock outcrop and similar soils:* 20 percent

*Minor components:* 5 percent

### ***Description of Chatfield and similar soils***

The typical sequence, depth, and composition of the layers of the soil are as follows—

*Surface layer:*

Oi—0 to 1 inch; slightly decomposed plant material  
Oa—1 to 3 inches; highly decomposed plant material  
A—3 to 5 inches; cobbly loam

*Subsoil layer:*

Bw1—5 to 10 inches; cobbly loam  
Bw2—10 to 24 inches; cobbly sandy loam  
BC—24 to 30 inches; cobbly sandy loam

*Substratum:*

2R—30 inches; bedrock

#### **Properties and Qualities**

*Drainage class:* well drained

*Parent material:* coarse-loamy till derived from granite and gneiss

*Permeability:* moderate or moderately rapid

*Available water capacity:* low

*Reaction:* very strongly acid to moderately acid

*Depth to restrictive feature:* 20 to 40 inches to bedrock (lithic)

*Depth to high water table:* greater than 6 feet

#### **Interpretative Groups**

*Land capability classification (non-irrigated):* 7s

*Hydrologic group:* C

### ***Description of Hollis and similar soils***

The typical sequence, depth, and composition of the layers of the soil are as follows—

*Surface layer:*

Oi—0 to 1 inch; slightly decomposed plant material  
Oa—1 to 3 inches; highly decomposed plant material  
A—3 to 6 inches; cobbly loam

*Subsoil layer:*

Bw1—6 to 8 inches; cobbly loam  
Bw2—8 to 16 inches; gravelly sandy loam

*Substratum:*

2R—16 inches; bedrock

#### **Properties and Qualities**

*Drainage class:* well drained

*Parent material:* loamy till derived from granite and gneiss

*Permeability:* moderate or moderately rapid

*Available water capacity:* very low

*Reaction:* very strongly acid to moderately acid

*Depth to restrictive feature:* 10 to 20 inches to bedrock (lithic)

*Depth to high water table:* greater than 6 feet

#### **Interpretative Groups**

*Land capability classification (non-irrigated):* 7s

*Hydrologic group:* D

### ***Description of Rock outcrop***

Rock outcrop typically consists of bedrock exposed at the surface. A description of this component is not provided.

### **Properties and Qualities**

*Depth to Restrictive Feature:* 0 inches to bedrock (lithic)

### **Interpretative Groups**

*Land capability classification (non-irrigated):* 8s

*Hydrologic group:* D

### ***Minor Components***

- Very deep, well drained Rockaway, thin fragipan soils

## **ChwBc—Chippewa silt loam, 0 to 8 percent slopes, extremely stony**

### ***Map Unit Setting***

*Slope:* nearly level to gently sloping

*Landscape:* drumlin fields

*Landform:* interdrumlins

*Surface cover:* 3 to 14 percent stones

### ***Map Unit Composition***

*Chippewa and similar soils:* 80 percent

*Minor components:* 20 percent

### ***Description of Chippewa and similar soils***

The typical sequence, depth, and composition of the layers of the soil are as follows—

#### ***Surface layer:***

Oi—0 to 2 inches; slightly decomposed plant material

A—2 to 4 inches; silt loam

#### ***Subsurface layer:***

Eg—4 to 8 inches; silt loam

#### ***Subsoil layer:***

Bg—8 to 13 inches; silt loam

Bgx1—13 to 21 inches; silt loam

Bgx2—21 to 29 inches; silt loam

#### ***Substratum:***

Cg1—29 to 34 inches; silt loam

Cg2—34 to 60 inches; fine sandy loam

### **Properties and Qualities**

*Drainage class:* poorly drained

*Parent material:* fine-loamy till derived from limestone, sandstone, and shale

*Permeability:* very slow to moderate

*Available water capacity:* very low

*Reaction:* very strongly acid to moderately alkaline

*Depth to restrictive feature:* 8 to 20 inches to fragipan

*Ponding depth:* 0 to 6 inches above surface

*Depth to high water table:* 0 inches

**Interpretative Groups**

*Land capability classification (non-irrigated): 7s*

*Hydrologic group: D*

**Minor Components**

- Deep, very poorly drained Alden soils
- Deep, somewhat poorly drained Venango soils

**CorA—Colonie loamy fine sand, 0 to 3 percent slopes****Map Unit Setting**

*Slope:* nearly level

*Landscape:* river valleys

*Landform:* outer terraces

**Map Unit Composition**

*Colonie and similar soils:* 80 percent

*Minor components:* 20 percent

**Description of Colonie and similar soils**

The typical sequence, depth, and composition of the layers of the soil are as follows—

*Surface layer:*

A—0 to 2 inches; loamy fine sand

Ap—2 to 11 inches; loamy fine sand

*Subsurface layer:*

E—11 to 24 inches; fine sand

E and Bt1—24 to 40 inches; fine sand

E and Bt2—40 to 62 inches; fine sand

**Properties and Qualities**

*Drainage class:* somewhat excessively drained

*Parent material:* post glacial sandy alluvium and/or sandy Aeolian deposits and/or glaciofluvial deposits

*Permeability:* moderately rapid or rapid

*Available water capacity:* low

*Reaction:* strongly acid to neutral

*Depth to high water table:* greater than 6 feet

**Interpretative Groups**

*Land capability classification (non-irrigated): 2s*

*Hydrologic group: A*

**Minor Components**

- Very deep, well drained Delaware soils
- Very deep, well drained Unadilla soils

**CorB—Colonie loamy fine sand, 3 to 8 percent slopes****Map Unit Setting**

*Slope:* gently sloping

*Landscape:* river valleys  
*Landform:* outer terraces

### **Map Unit Composition**

*Colonie and similar soils:* 80 percent  
*Minor components:* 20 percent

### **Description of Colonie and similar soils**

The typical sequence, depth, and composition of the layers of the soil are as follows—

#### *Surface layer:*

A—0 to 2 inches; loamy fine sand  
 Ap—2 to 11 inches; loamy fine sand

#### *Subsurface layer:*

E—11 to 24 inches; fine sand  
 E and Bt1—24 to 40 inches; fine sand  
 E and Bt2—40 to 62 inches; fine sand

### **Properties and Qualities**

*Drainage class:* somewhat excessively drained  
*Parent material:* post glacial sandy alluvium and/or sandy Aeolian deposits and/or glaciofluvial deposits  
*Permeability:* moderately rapid or rapid  
*Available water capacity:* low  
*Reaction:* strongly acid to neutral  
*Depth to high water table:* greater than 6 feet

### **Interpretative Groups**

*Land capability classification (non-irrigated):* 2s  
*Hydrologic group:* A

### **Minor Components**

- Very deep, well drained Delaware soils
- Very deep, well drained Unadilla soils

## **DefAr—Delaware fine sandy loam, 0 to 3 percent slopes, rarely flooded**

### **Map Unit Setting**

*Slope:* nearly level  
*Landscape:* river valleys  
*Landform:* terraces

### **Map Unit Composition**

*Delaware and similar soils:* 80 percent  
*Minor components:* 20 percent

### **Description of Delaware and similar soils**

The typical sequence, depth, and composition of the layers of the soil are as follows—

#### *Surface layer:*

Oi—0 to 1 inch; slightly decomposed plant material

Ap1—1 to 4 inches; fine sandy loam

Ap2—4 to 11 inches; fine sandy loam

*Subsoil layer:*

Bw1—11 to 20 inches; fine sandy loam

Bw2—20 to 33 inches; fine sandy loam

BC—33 to 41 inches; fine sandy loam

*Substratum:*

C1—41 to 56 inches; fine sandy loam

C2—56 to 60 inches; loam

**Properties and Qualities**

*Drainage class:* well drained

*Parent material:* post glacial coarse-loamy alluvium

*Permeability:* moderately rapid or rapid

*Available water capacity:* moderate

*Reaction:* strongly acid to slightly acid

*Depth to high water table:* greater than 6 feet

*Flooding:* very rare

**Interpretative Groups**

*Land capability classification (non-irrigated):* 1

*Hydrologic group:* B

**Minor Components**

- Very deep, somewhat excessively drained Colonie soils
- Very deep, well drained Unadilla soils

**DefBr—Delaware fine sandy loam, 3 to 8 percent slopes,  
rarely flooded**

**Map Unit Setting**

*Slope:* gently sloping

*Landscape:* river valleys

*Landform:* terraces

**Map Unit Composition**

*Delaware and similar soils:* 80 percent

*Minor components:* 20 percent

**Description of Delaware and similar soils**

The typical sequence, depth, and composition of the layers of the soil are as follows—

*Surface layer:*

Oi—0 to 1 inch; slightly decomposed plant material

Ap1—1 to 4 inches; fine sandy loam

Ap2—4 to 11 inches; fine sandy loam

*Subsoil layer:*

Bw1—11 to 20 inches; fine sandy loam

Bw2—20 to 33 inches; fine sandy loam

BC—33 to 41 inches; fine sandy loam

*Substratum:*

C1—41 to 56 inches; fine sandy loam

C2—56 to 60 inches; loam

**Properties and Qualities***Drainage class:* well drained*Parent material:* post glacial coarse-loamy alluvium*Permeability:* moderately rapid or rapid*Available water capacity:* moderate*Reaction:* strongly acid to slightly acid*Depth to high water table:* greater than 6 feet*Flooding:* very rare**Interpretative Groups***Land capability classification (non-irrigated):* 2e*Hydrologic group:* B**Minor Components**

- Very deep, somewhat excessively drained Colonie soils
- Very deep, well drained Unadilla soils

## **FaxC—Farmington-Rock outcrop complex, 0 to 15 percent slopes**

**Map Unit Setting***Slope:* nearly level to strongly sloping*Landscape:* till plains*Landform:* ground moraines*Surface cover:* 15 to 49 percent stones**Map Unit Composition***Farmington and similar soils:* 50 percent*Rock outcrop and similar soils:* 40 percent*Minor components:* 10 percent**Description of Farmington and similar soils**

The typical sequence, depth, and composition of the layers of the soil are as follows—

*Surface layer:*

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 3 inches; silt loam

*Subsoil layer:*

Bw1—3 to 9 inches; silt loam

Bw2—9 to 15 inches; silt loam

*Substratum:*

2R—15 inches; bedrock

**Properties and Qualities***Drainage class:* well drained*Parent material:* loamy till derived from limestone and dolomite*Permeability:* moderate or moderately rapid*Available water capacity:* very low



*Reaction:* strongly acid to slightly alkaline

*Depth to restrictive feature:* 10 to 20 inches to bedrock (lithic)

*Depth to high water table:* greater than 6 feet

**Interpretative Groups**

*Land capability classification (non-irrigated):* 7s

*Hydrologic group:* D

***Description of Rock outcrop***

Rock outcrop typically consists of bedrock exposed at the surface. A description of this component is not provided.

**Properties and Qualities**

*Depth to restrictive feature:* 0 inches to bedrock (lithic)

**Interpretative Groups**

*Land capability classification (non-irrigated):* 8s

*Hydrologic group:* D

***Minor Components***

- Moderately deep, well drained Galway soils

**FdwB—Farmington-Wassaic-Rock outcrop complex, 0 to 8 percent slopes**

***Map Unit Setting***

*Slope:* nearly level to gently sloping

*Landscape:* till plains

*Landform:* ground moraines

*Surface cover:* 3 to 14 percent stones

***Map Unit Composition***

*Farmington and similar soils:* 40 percent

*Wassaic and similar soils:* 30 percent

*Rock outcrop and similar soils:* 25 percent

*Minor components:* 5 percent

***Description of Farmington and similar soils***

The typical sequence, depth, and composition of the layers of the soil are as follows—

*Surface layer:*

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 3 inches; silt loam

*Subsoil layer:*

Bw1—3 to 9 inches; silt loam

Bw2—9 to 15 inches; silt loam

*Substratum:*

2R—15 inches; bedrock

**Properties and Qualities**

*Drainage class:* well drained

*Parent material:* loamy till derived from limestone and dolomite

*Permeability:* moderate or moderately rapid

*Available water capacity:* very low

*Reaction:* strongly acid to slightly alkaline  
*Depth to restrictive feature:* 10 to 20 inches to bedrock (lithic)  
*Depth to high water table:* greater than 6 feet

#### **Interpretative Groups**

*Land capability classification (non-irrigated):* 6s  
*Hydrologic group:* D

#### ***Description of Wassaic and similar soils***

The typical sequence, depth, and composition of the layers of the soil are as follows—

##### *Surface layer:*

Oi—0 to 1 inch; slightly decomposed plant material  
 A—1 to 5 inches; loam  
 E/A—5 to 9 inches; loam  
 Bt/E—9 to 17 inches; silty clay loam

##### *Subsoil layer:*

Bt—17 to 28 inches; silty clay loam

##### *Substratum:*

2R—28 inches; bedrock

#### **Properties and Qualities**

*Drainage class:* well drained  
*Parent material:* fine-loamy till derived from limestone and dolomite  
*Permeability:* moderate  
*Available water capacity:* low  
*Reaction:* moderately acid to neutral  
*Depth to restrictive feature:* 20 to 40 inches to bedrock (lithic)  
*Depth to high water table:* greater than 6 feet

#### **Interpretative Groups**

*Land capability classification (non-irrigated):* 6s  
*Hydrologic group:* C

#### ***Description of Rock outcrop***

Rock outcrop typically consists of bedrock exposed at the surface. A description of this component is not provided.

#### **Properties and Qualities**

*Depth to restrictive feature:* 0 inches to bedrock (lithic)

#### **Interpretative Groups**

*Land capability classification (non-irrigated):* 8s  
*Hydrologic group:* D

#### ***Minor Components***

- Moderately deep, well drained Galway soils

### **FmhAs—Fluvaquents, loamy, 0 to 3 percent slopes, occasionally flooded**

#### ***Map Unit Setting***

*Slope:* nearly level  
*Landscape:* river valleys  
*Landform:* flood plains

**Map Unit Composition**

*Fluvaquents and similar soils:* 90 percent

*Minor components:* 10 percent

**Description of Fluvaquents and similar soils**

The typical sequence, depth, and composition of the layers of the soil are as follows—

*Surface layer:*

A1—0 to 5 inches; silt loam

A2—5 to 12 inches; silt loam

*Substratum:*

C1—12 to 18 inches; sandy clay loam

C2—18 to 24 inches; sandy clay loam

C3—24 to 60 inches; sandy loam

**Properties and Qualities**

*Drainage class:* somewhat poorly drained to very poorly drained

*Parent material:* recent alluvium

*Permeability:* moderate to rapid

*Available water capacity:* low

*Reaction:* strongly acid to neutral

*Depth to high water table:* 0 to 18 inches

*Flooding:* occasional

**Interpretative Groups**

*Land capability classification (non-irrigated):* 3w

*Hydrologic group:* B/D

**Minor Components**

- Very deep, moderately well drained Udifluvents

**FrdAb—Fredon-Halsey complex, 0 to 3 percent slopes, very stony****Map Unit Setting**

*Slope:* nearly level

*Landscape:* outwash plains

*Landform:* drainageways

*Surface cover:* 0.1 to 2 percent stones

**Map Unit Composition**

*Fredon and similar soils:* 45 percent

*Halsey and similar soils:* 40 percent

*Minor components:* 15 percent

**Description of Fredon and similar soils**

The typical sequence, depth, and composition of the layers of the soil are as follows—

*Surface layer:*

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 8 inches; silt loam

*Subsoil layer:*

Bw1—8 to 14 inches; silt loam

Bw2—14 to 18 inches; loam

Bw3—18 to 23 inches; loam

*Substratum:*

2C1—23 to 31 inches; extremely gravelly loamy coarse sand

2C2—31 to 36 inches; extremely gravelly coarse sand

2C3—36 to 45 inches; very gravelly coarse sand

2C4—45 to 55 inches; extremely gravelly coarse sand

2C5—55 to 60 inches; very gravelly coarse sand

**Properties and Qualities***Drainage class:* somewhat poorly drained*Parent material:* glaciofluvial deposits derived from sandstone and/or limestone and dolomite and/or granite and gneiss*Permeability:* moderately slow to rapid*Available water capacity:* low*Reaction:* strongly acid to moderately alkaline*Depth to restrictive feature:* 22 to 40 inches to strongly contrasting textural stratification*Depth to high water table:* 0 to 18 inches**Interpretative Groups***Land capability classification (non-irrigated):* 3w*Hydrologic group:* D***Description of Halsey and similar soils***

The typical sequence, depth, and composition of the layers of the soil are as follows—

*Surface layer:*

Oi—0 to 1 inch; slightly decomposed plant material

A1—1 to 5 inches; silt loam

A2—5 to 11 inches; silt loam

*Subsoil layer:*

Bg—11 to 20 inches; silt loam

*Substratum:*

2Cg1—20 to 25 inches; loamy sand

2Cg2—25 to 35 inches; very gravelly coarse sand

2Cg3—35 to 49 inches; very gravelly coarse sand

2Cg4—49 to 56 inches; extremely gravelly coarse sand

2Cg5—56 to 60 inches; extremely gravelly coarse sand

**Properties and Qualities***Drainage class:* very poorly drained*Parent material:* glaciofluvial deposits derived from sandstone and/or limestone and dolomite and/or granite and gneiss*Permeability:* moderate to rapid*Available water capacity:* low*Reaction:* strongly acid to moderately alkaline*Depth to restrictive feature:* 20 to 40 inches to strongly contrasting textural stratification*Ponding depth:* 0 to 6 inches above surface*Depth to high water table:* 0 inches

**Interpretative Groups**

*Land capability classification (non-irrigated): 5w*

*Hydrologic group: B/D*

**Minor Components**

- Deep, moderately well drained Hero soils

**GawEh—Galway loam, 35 to 60 percent slopes, very rocky****Map Unit Setting**

*Slope:* steep or very steep

*Landscape:* till plains

*Landform:* ridges

*Surface cover:* 15 to 49 percent stones

**Map Unit Composition**

*Galway and similar soils:* 80 percent

*Minor components:* 20 percent

**Description of Galway and similar soils**

The typical sequence, depth, and composition of the layers of the soil are as follows—

*Surface layer:*

Oi—0 to 2 inches; slightly decomposed plant material

Oe—2 to 3 inches; moderately decomposed plant material

A—3 to 5 inches; loam

*Subsoil layer:*

Bw1—5 to 15 inches; gravelly loam

Bw2—15 to 24 inches; gravelly loam

*Substratum:*

2R—24 inches; bedrock

**Properties and Qualities**

*Drainage class:* well drained

*Parent material:* coarse-loamy till derived from limestone and dolomite

*Permeability:* moderate

*Available water capacity:* low

*Reaction:* very strongly acid to slightly alkaline

*Depth to restrictive feature:* 20 to 40 inches to bedrock (lithic)

*Depth to high water table:* greater than 6 feet

**Interpretative Groups**

*Land capability classification (non-irrigated): 7s*

*Hydrologic group: C*

**Minor Components**

- Shallow, well drained Farmington soils
- Rock outcrop
- Deep, well drained Wallpack, aeolian mantle soils

## **HdxAb—Hazen-Hoosic complex, 0 to 3 percent slopes, very stony**

### ***Map Unit Setting***

*Slope:* nearly level

*Landscape:* outwash plains

*Landform:* valley trains

*Surface cover:* 0.1 to 2 percent stones

### ***Map Unit Composition***

*Hazen and similar soils:* 50 percent

*Hoosic and similar soils:* 40 percent

*Minor components:* 10 percent

### ***Description of Hazen and similar soils***

The typical sequence, depth, and composition of the layers of the soil are as follows—

*Surface layer:*

Oi—0 to 1 inch; slightly decomposed plant material

Ap—1 to 10 inches; loam

*Subsoil layer:*

Bt—10 to 18 inches; sandy loam

*Substratum:*

2C1—18 to 29 inches; very stony loamy coarse sand

2C2—29 to 41 inches; very gravelly coarse sand

2C3—41 to 60 inches; extremely gravelly coarse sand

### **Properties and Qualities**

*Drainage class:* well drained

*Parent material:* glaciofluvial deposits derived from sandstone and shale and/or limestone and dolomite and/or conglomerate

*Permeability:* moderate to rapid

*Available water capacity:* low

*Reaction:* moderately acid to slightly alkaline

*Depth to restrictive feature:* 18 to 40 inches to strongly contrasting textural stratification

*Depth to high water table:* greater than 6 feet

### **Interpretative Groups**

*Land capability classification (non-irrigated):* 1

*Hydrologic group:* B

### ***Description of Hoosic and similar soils***

The typical sequence, depth, and composition of the layers of the soil are as follows—

*Surface layer:*

Oi—0 to 1 inch; slightly decomposed plant material

Ap—1 to 9 inches; gravelly loam

*Subsoil layer:*

Bw—9 to 21 inches; very gravelly coarse sandy loam

*Substratum:*

2C1—21 to 27 inches; extremely gravelly loamy coarse sand  
 2C2—27 to 37 inches; extremely gravelly coarse sand  
 2C3—37 to 49 inches; extremely gravelly coarse sand  
 2C4—49 to 60 inches; extremely gravelly coarse sand

**Properties and Qualities***Drainage class:* somewhat excessively drained*Parent material:* glaciofluvial deposits derived from sandstone and shale and/or conglomerate*Permeability:* moderately rapid to very rapid*Available water capacity:* low*Reaction:* very strongly acid to moderately acid*Depth to high water table:* greater than 6 feet**Interpretative Groups***Land capability classification (non-irrigated):* 2s*Hydrologic group:* B**Minor Components**

- Deep, moderately well drained Hero soils

## **HdxBb—Hazen-Hoosic complex, 3 to 8 percent slopes, very stony**

**Map Unit Setting***Slope:* gently sloping*Landscape:* outwash plains*Landform:* valley trains*Surface cover:* 0.1 to 2 percent stones**Map Unit Composition***Hazen and similar soils:* 60 percent*Hoosic and similar soils:* 35 percent*Minor components:* 5 percent**Description of Hazen and similar soils**

The typical sequence, depth, and composition of the layers of the soil are as follows—

*Surface layer:*

Oi—0 to 1 inch; slightly decomposed plant material

Ap—1 to 10 inches; loam

*Subsoil layer:*

Bt—10 to 18 inches; sandy loam

*Substratum:*

2C1—18 to 29 inches; very stony loamy coarse sand

2C2—29 to 41 inches; very gravelly coarse sand

2C3—41 to 60 inches; extremely gravelly coarse sand

**Properties and Qualities***Drainage class:* well drained*Parent material:* glaciofluvial deposits derived from sandstone and shale and/or limestone and dolomite and/or conglomerate

*Permeability:* moderate to rapid

*Available water capacity:* low

*Reaction:* moderately acid to slightly alkaline

*Depth to restrictive feature:* 18 to 40 inches to strongly contrasting textural stratification

*Depth to high water table:* greater than 6 feet

#### **Interpretative Groups**

*Land capability classification (non-irrigated):* 2e

*Hydrologic group:* B

#### **Description of Hoosic and similar soils**

The typical sequence, depth, and composition of the layers of the soil are as follows—

*Surface layer:*

Oi—0 to 1 inch; slightly decomposed plant material

Ap—1 to 9 inches; gravelly loam

*Subsoil layer:*

Bw—9 to 21 inches; very gravelly coarse sandy loam

*Substratum:*

2C1—21 to 27 inches; extremely gravelly loamy coarse sand

2C2—27 to 37 inches; extremely gravelly coarse sand

2C3—37 to 49 inches; extremely gravelly coarse sand

2C4—49 to 60 inches; extremely gravelly coarse sand

#### **Properties and Qualities**

*Drainage class:* somewhat excessively drained

*Parent material:* glaciofluvial deposits derived from sandstone and shale and/or conglomerate

*Permeability:* moderately rapid to very rapid

*Available water capacity:* low

*Reaction:* very strongly acid to moderately acid

*Depth to high water table:* greater than 6 feet

#### **Interpretative Groups**

*Land capability classification (non-irrigated):* 2s

*Hydrologic group:* B

#### **Minor Components**

- Very deep, excessively drained Otisville soils

### **HhmBc—Hibernia loam, 0 to 8 percent slopes, extremely stony**

#### **Map Unit Setting**

*Slope:* nearly level to gently sloping

*Landscape:* till plains

*Landform:* ground moraines

*Surface cover:* 3 to 14 percent stones

#### **Map Unit Composition**

*Hibernia and similar soils:* 80 percent

*Minor components:* 20 percent



**Description of Hibernia and similar soils**

The typical sequence, depth, and composition of the layers of the soil are as follows—

*Surface layer:*

Oi—0 to 2 inches; slightly decomposed plant material

A—2 to 4 inches; loam

*Subsoil layer:*

Bt1—4 to 11 inches; loam

Bt2—11 to 19 inches; loam

Bx—19 to 29 inches; gravelly loam

*Substratum:*

C1—29 to 35 inches; very cobbly silty clay loam

C2—35 to 60 inches; extremely gravelly sandy loam

**Properties and Qualities**

*Drainage class:* somewhat poorly drained

*Parent material:* coarse-loamy till derived from granite and gneiss and/or limestone, sandstone, and shale and/or quartzite

*Permeability:* very slow to moderately rapid

*Available water capacity:* very low

*Reaction:* extremely acid to strongly acid

*Depth to restrictive feature:* 18 to 36 inches to fragipan

*Depth to high water table:* 6 to 18 inches

**Interpretative Groups**

*Land capability classification (non-irrigated):* 7s

*Hydrologic group:* C

**Minor Components**

- Very deep, very poorly drained Alden, gneiss till substratum soils
- Very deep, well drained Rockaway, thin fragipan soils

**HkrgBb—Hinckley loamy coarse sand, 0 to 8 percent slopes, very stony****Map Unit Setting**

*Slope:* gently sloping

*Landscape:* outwash plains

*Landform:* outwash deltas

*Surface cover:* 0.1 to 2 percent stones

**Map Unit Composition**

*Hinckley and similar soils:* 85 percent

*Minor components:* 15 percent

**Description of Hinckley and similar soils**

The typical sequence, depth, and composition of the layers of the soil are as follows—

*Surface layer:*

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 3 inches; loamy coarse sand

*Subsoil layer:*

Bw1—3 to 9 inches; extremely cobbly loamy coarse sand

Bw2—9 to 19 inches; extremely cobbly loamy coarse sand

*Substratum:*

C—19 to 60 inches; stratified extremely gravelly coarse sand

**Properties and Qualities***Drainage class:* excessively drained*Parent material:* glaciofluvial deposits derived from granite and gneiss*Permeability:* rapid or very rapid*Available water capacity:* very low*Reaction:* extremely acid to moderately acid*Depth to high water table:* greater than 6 feet**Interpretative Groups***Land capability classification (non-irrigated):* 3s*Hydrologic group:* A**Minor Components**

- Very deep, well drained Riverhead soils
- Very deep, moderately well drained Horseneck soils

## **HkrgCb—Hinckley loamy coarse sand, 8 to 15 percent slopes, very stony**

**Map Unit Setting***Slope:* strongly sloping*Landscape:* outwash plains*Landform:* outwash deltas*Surface cover:* 0.1 to 2 percent stones**Map Unit Composition***Hinckley and similar soils:* 85 percent*Minor components:* 15 percent**Description of Hinckley and similar soils**

The typical sequence, depth, and composition of the layers of the soil are as follows—

*Surface layer:*

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 3 inches; loamy coarse sand

*Subsoil layer:*

Bw1—3 to 9 inches; extremely cobbly loamy coarse sand

Bw2—9 to 19 inches; extremely cobbly loamy coarse sand

*Substratum:*

C—19 to 60 inches; stratified extremely gravelly coarse sand

**Properties and Qualities***Drainage class:* excessively drained*Parent material:* glaciofluvial deposits derived from granite and gneiss*Permeability:* rapid or very rapid*Available water capacity:* very low

*Reaction:* extremely acid to moderately acid

*Depth to high water table:* greater than 6 feet

**Interpretative Groups**

*Land capability classification (non-irrigated):* 4e

*Hydrologic group:* A

**Minor Components**

- Very deep, well drained Riverhead soils
- Very deep, moderately well drained Horseneck soils

**HncD—Hollis-Rock outcrop-Chatfield complex, 15 to 35 percent slopes**

**Map Unit Setting**

*Slope:* moderately steep or steep

*Landscape:* mountains

*Landform:* ground moraines

*Surface cover:* 15 to 49 percent stones

**Map Unit Composition**

*Hollis and similar soils:* 45 percent

*Rock outcrop and similar soils:* 30 percent

*Chatfield and similar soils:* 20 percent

*Minor components:* 5 percent

**Description of Hollis and similar soils**

The typical sequence, depth, and composition of the layers of the soil are as follows—

*Surface layer:*

Oi—0 to 1 inch; slightly decomposed plant material

Oa—1 to 3 inches; highly decomposed plant material

A—3 to 6 inches; cobbly loam

*Subsoil layer:*

Bw1—6 to 8 inches; cobbly loam

Bw2—8 to 16 inches; gravelly sandy loam

*Substratum:*

2R—16 inches; bedrock

**Properties and Qualities**

*Drainage class:* well drained

*Parent material:* loamy till derived from granite and gneiss

*Permeability:* moderate or moderately rapid

*Available water capacity:* very low

*Reaction:* very strongly acid to moderately acid

*Depth to restrictive feature:* 10 to 20 inches to bedrock (lithic)

*Depth to high water table:* greater than 6 feet

**Interpretative Groups**

*Land capability classification (non-irrigated):* 7s

*Hydrologic group:* D

### ***Description of Rock outcrop***

Rock outcrop typically consists of bedrock exposed at the surface. A description of this component is not provided.

#### **Properties and Qualities**

*Depth to restrictive feature:* 0 inches to bedrock (lithic)

#### **Interpretative Groups**

*Land capability classification (non-irrigated):* 8s

*Hydrologic group:* D

### ***Description of Chatfield and similar soils***

The typical sequence, depth, and composition of the layers of the soil are as follows—

#### *Surface layer:*

Oi—0 to 1 inch; slightly decomposed plant material

Oa—1 to 3 inches; highly decomposed plant material

A—3 to 5 inches; cobbly loam

#### *Subsoil layer:*

Bw1—5 to 10 inches; cobbly loam

Bw2—10 to 24 inches; cobbly sandy loam

BC—24 to 30 inches; cobbly sandy loam

#### *Substratum:*

2R—30 inches; bedrock

#### **Properties and Qualities**

*Drainage class:* well drained

*Parent material:* coarse-loamy till derived from granite and gneiss

*Permeability:* moderate or moderately rapid

*Available water capacity:* low

*Reaction:* very strongly acid to moderately acid

*Depth to restrictive feature:* 20 to 40 inches to bedrock (lithic)

*Depth to high water table:* greater than 6 feet

#### **Interpretative Groups**

*Land capability classification (non-irrigated):* 7s

*Hydrologic group:* C

### ***Minor Components***

- Very deep, well drained Rockaway, thin fragipan soils

## **HonCb—Hoosic-Hazen complex, 8 to 15 percent slopes, very stony**

### ***Map Unit Setting***

*Slope:* strongly sloping

*Landscape:* outwash plains

*Landform:* valley trains

*Surface cover:* 0.1 to 2 percent stones

### ***Map Unit Composition***

*Hoosic and similar soils:* 60 percent

*Hazen and similar soils:* 30 percent

*Minor components:* 10 percent

### ***Description of Hoosic and similar soils***

The typical sequence, depth, and composition of the layers of the soil are as follows—

*Surface layer:*

Oi—0 to 1 inch; slightly decomposed plant material

Ap—1 to 9 inches; gravelly loam

*Subsoil layer:*

Bw—9 to 21 inches; very gravelly coarse sandy loam

*Substratum:*

2C1—21 to 27 inches; extremely gravelly loamy coarse sand

2C2—27 to 37 inches; extremely gravelly coarse sand

2C3—37 to 49 inches; extremely gravelly coarse sand

2C4—49 to 60 inches; extremely gravelly coarse sand

### **Properties and Qualities**

*Drainage class:* somewhat excessively drained

*Parent material:* glaciofluvial deposits derived from sandstone and shale and/or conglomerate

*Permeability:* moderately rapid to very rapid

*Available water capacity:* low

*Reaction:* very strongly acid to moderately acid

*Depth to high water table:* greater than 6 feet

### **Interpretative Groups**

*Land capability classification (non-irrigated):* 3e

*Hydrologic group:* B

### ***Description of Hazen and similar soils***

The typical sequence, depth, and composition of the layers of the soil are as follows—

*Surface layer:*

Oi—0 to 1 inch; slightly decomposed plant material

Ap—1 to 10 inches; loam

*Subsoil layer:*

Bt—10 to 18 inches; sandy loam

*Substratum:*

2C1—18 to 29 inches; very stony loamy coarse sand

2C2—29 to 41 inches; very gravelly coarse sand

2C3—41 to 60 inches; extremely gravelly coarse sand

### **Properties and Qualities**

*Drainage class:* well drained

*Parent material:* glaciofluvial deposits derived from sandstone and shale and/or limestone and dolomite and/or conglomerate

*Permeability:* moderate to rapid

*Available water capacity:* low

*Reaction:* moderately acid to slightly alkaline

*Depth to restrictive feature:* 18 to 40 inches to strongly contrasting textural stratification

*Depth to high water table:* greater than 6 feet

**Interpretative Groups***Land capability classification (non-irrigated): 3e**Hydrologic group: B***Minor Components**

- Very deep, excessively drained Otisville soils
- Very deep, somewhat excessively drained Colonie soils

**HopEb—Hoosic-Otisville complex, 25 to 60 percent slopes, very stony****Map Unit Setting***Slope:* steep or very steep*Landscape:* outwash plains*Landform:* valley trains*Surface cover:* 0.1 to 2 percent stones**Map Unit Composition***Hoosic and similar soils:* 50 percent*Otisville and similar soils:* 40 percent*Minor components:* 10 percent**Description of Hoosic and similar soils**

The typical sequence, depth, and composition of the layers of the soil are as follows—

*Surface layer:*

Oi—0 to 1 inch; slightly decomposed plant material

Ap—1 to 9 inches; gravelly loam

*Subsoil layer:*

Bw—9 to 21 inches; very gravelly coarse sandy loam

*Substratum:*

2C1—21 to 27 inches; extremely gravelly loamy coarse sand

2C2—27 to 37 inches; extremely gravelly coarse sand

2C3—37 to 49 inches; extremely gravelly coarse sand

2C4—49 to 60 inches; extremely gravelly coarse sand

**Properties and Qualities***Drainage class:* somewhat excessively drained*Parent material:* glaciofluvial deposits derived from sandstone and shale and/or conglomerate*Permeability:* moderately rapid to very rapid*Available water capacity:* low*Reaction:* very strongly acid to moderately acid*Depth to high water table:* greater than 6 feet**Interpretative Groups***Land capability classification (non-irrigated): 7e**Hydrologic group: B***Description of Otisville and similar soils**

The typical sequence, depth, and composition of the layers of the soil are as follows—

*Surface layer:*

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 2 inches; gravelly sandy loam

*Subsoil layer:*

Bw1—2 to 7 inches; very gravelly loamy sand

Bw2—7 to 11 inches; very gravelly loamy coarse sand

BC—11 to 19 inches; very gravelly loamy coarse sand

*Substratum:*

C1—19 to 31 inches; very gravelly coarse sand

C2—31 to 43 inches; extremely gravelly coarse sand

C3—43 to 60 inches; loamy sand

**Properties and Qualities***Drainage class:* excessively drained*Parent material:* glaciofluvial deposits derived from sandstone and shale and/or conglomerate*Permeability:* rapid or very rapid*Available water capacity:* very low*Reaction:* extremely acid to slightly acid*Depth to high water table:* greater than 6 feet**Interpretative Groups***Land capability classification (non-irrigated):* 7e*Hydrologic group:* A***Minor Components***

- Deep, well drained Hazen soils

## **LacBc—Lackawanna cobbly fine sandy loam, 0 to 8 percent slopes, extremely stony**

***Map Unit Setting****Slope:* nearly level to gently sloping*Landscape:* mountains*Landform:* ground moraines*Surface cover:* 3 to 14 percent stones***Map Unit Composition****Lackawanna and similar soils:* 85 percent*Minor components:* 15 percent***Description of Lackawanna and similar soils***

The typical sequence, depth, and composition of the layers of the soil are as follows—

*Surface layer:*

Oi—0 to 2 inches; slightly decomposed plant material

A—2 to 3 inches; cobbly fine sandy loam

*Subsurface layer:*

E—3 to 7 inches; cobbly fine sandy loam

*Subsoil layer:*

Bhs—7 to 8 inches; cobbly fine sandy loam

Bw1—8 to 16 inches; stony loam  
 Bw2—16 to 24 inches; stony loam  
 Bx1—24 to 29 inches; stony fine sandy loam  
 Bx2—29 to 60 inches; very cobbly fine sandy loam

### **Properties and Qualities**

*Drainage class:* well drained

*Parent material:* coarse-loamy till derived from red shale and/or red sandstone and siltstone

*Permeability:* slow to moderate

*Available water capacity:* low

*Reaction:* extremely acid to strongly acid

*Depth to restrictive feature:* 14 to 36 inches to fragipan

*Depth to high water table:* 20 to 29 inches

### **Interpretative Groups**

*Land capability classification (non-irrigated):* 7s

*Hydrologic group:* C

### **Minor Components**

- Very deep, moderately well drained Wellsboro soils
- Moderately deep, somewhat excessively drained Oquaga soils

## **LacCc—Lackawanna cobbly fine sandy loam, 8 to 15 percent slopes, extremely stony**

### **Map Unit Setting**

*Slope:* strongly sloping

*Landscape:* mountains

*Landform:* ground moraines

*Surface cover:* 3 to 14 percent stones

### **Map Unit Composition**

*Lackawanna and similar soils:* 85 percent

*Minor components:* 15 percent

### **Description of Lackawanna and similar soils**

The typical sequence, depth, and composition of the layers of the soil are as follows—

#### *Surface layer:*

Oi—0 to 2 inches; slightly decomposed plant material

A—2 to 3 inches; cobbly fine sandy loam

#### *Subsurface layer:*

E—3 to 7 inches; cobbly fine sandy loam

#### *Subsoil layer:*

Bhs—7 to 8 inches; cobbly fine sandy loam

Bw1—8 to 16 inches; stony loam

Bw2—16 to 24 inches; stony loam

Bx1—24 to 29 inches; stony fine sandy loam

Bx2—29 to 60 inches; very cobbly fine sandy loam



**Properties and Qualities**

*Drainage class:* well drained

*Parent material:* coarse-loamy till derived from red shale and/or red sandstone and siltstone

*Permeability:* slow to moderate

*Available water capacity:* low

*Reaction:* extremely acid to strongly acid

*Depth to restrictive feature:* 14 to 36 inches to fragipan

*Depth to high water table:* 20 to 29 inches

**Interpretative Groups**

*Land capability classification (non-irrigated):* 7s

*Hydrologic group:* C

**Minor Components**

- Very deep, moderately well drained Wellsboro soils
- Moderately deep, somewhat excessively drained Oquaga soils

**LacDc—Lackawanna cobbly fine sandy loam, 15 to 35 percent slopes, extremely stony****Map Unit Setting**

*Slope:* moderately steep or steep

*Landscape:* mountains

*Landform:* ground moraines

*Surface cover:* 3 to 14 percent stones

**Map Unit Composition**

*Lackawanna and similar soils:* 85 percent

*Minor components:* 15 percent

**Description of Lackawanna and similar soils**

The typical sequence, depth, and composition of the layers of the soil are as follows—

**Surface layer:**

Oi—0 to 2 inches; slightly decomposed plant material

A—2 to 3 inches; cobbly fine sandy loam

**Subsurface layer:**

E—3 to 7 inches; cobbly fine sandy loam

**Subsoil layer:**

Bhs—7 to 8 inches; cobbly fine sandy loam

Bw1—8 to 16 inches; stony loam

Bw2—16 to 24 inches; stony loam

Bx1—24 to 29 inches; stony fine sandy loam

Bx2—29 to 60 inches; very cobbly fine sandy loam

**Properties and Qualities**

*Drainage class:* well drained

*Parent material:* coarse-loamy till derived from red shale and/or red sandstone and siltstone

*Permeability:* slow to moderate

*Available water capacity:* low  
*Reaction:* extremely acid to strongly acid  
*Depth to restrictive feature:* 14 to 36 inches to fragipan  
*Depth to high water table:* 20 to 29 inches

#### **Interpretative Groups**

*Land capability classification (non-irrigated):* 7s  
*Hydrologic group:* C

#### **Minor Components**

- Very deep, moderately well drained Wellsboro soils
- Moderately deep, somewhat excessively drained Oquaga soils

## **LorB—Lordstown-Wallpack complex, 0 to 8 percent slopes**

#### **Map Unit Setting**

*Slope:* nearly level to gently sloping  
*Landscape:* till plains  
*Landform:* ridges

#### **Map Unit Composition**

*Lordstown and similar soils:* 50 percent  
*Wallpack and similar soils:* 35 percent  
*Minor components:* 15 percent

#### **Description of Lordstown and similar soils**

The typical sequence, depth, and composition of the layers of the soil are as follows—

*Surface layer:*  
 Oi—0 to 1 inch; slightly decomposed plant material  
 A—1 to 2 inches; loam

*Subsurface layer:*  
 E—2 to 3 inches; fine sandy loam

*Subsoil layer:*  
 Bw1—3 to 5 inches; loam  
 Bw2—5 to 17 inches; gravelly loam  
 Bw3—17 to 22 inches; gravelly loam

*Substratum:*  
 C—22 to 36 inches; very gravelly fine sandy loam  
 2R—36 inches; bedrock

#### **Properties and Qualities**

*Drainage class:* well drained  
*Parent material:* coarse-loamy till derived from limestone, sandstone, and shale  
*Permeability:* moderate  
*Available water capacity:* low  
*Reaction:* very strongly acid to moderately acid  
*Depth to restrictive feature:* 20 to 40 inches to bedrock (lithic)  
*Depth to high water table:* greater than 6 feet

**Interpretative Groups**

*Land capability classification (non-irrigated): 2e*

*Hydrologic group: C*

**Description of Wallpack and similar soils**

The typical sequence, depth, and composition of the layers of the soil are as follows—

*Surface layer:*

Ap1—0 to 3 inches; silt loam

Ap2—3 to 9 inches; gravelly silt loam

*Subsoil layer:*

Bt—9 to 16 inches; gravelly silt loam

Btx1—16 to 25 inches; gravelly silt loam

Btx2—25 to 65 inches; very gravelly silt loam

**Properties and Qualities**

*Drainage class:* well drained

*Parent material:* coarse-loamy till derived from limestone, sandstone, and shale

*Permeability:* very slow to moderately rapid

*Available water capacity:* very low

*Reaction:* strongly acid to slightly alkaline

*Depth to restrictive feature:* 12 to 36 inches to fragipan

*Depth to high water table:* 23 to 45 inches

**Interpretative Groups**

*Land capability classification (non-irrigated): 2e*

*Hydrologic group: C*

**Minor Components**

- Deep, well drained Chadakoin soils
- Very deep, moderately well drained Cambridge soils

**LorC—Lordstown-Wallpack complex, 8 to 15 percent slopes****Map Unit Setting**

*Slope:* strongly sloping

*Landscape:* till plains

*Landform:* ridges

**Map Unit Composition**

*Lordstown and similar soils:* 50 percent

*Wallpack and similar soils:* 35 percent

*Minor components:* 15 percent

**Description of Lordstown and similar soils**

The typical sequence, depth, and composition of the layers of the soil are as follows—

*Surface layer:*

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 2 inches; loam

*Subsurface layer:*

E—2 to 3 inches; fine sandy loam

*Subsoil layer:*

Bw1—3 to 5 inches; loam

Bw2—5 to 17 inches; gravelly loam

Bw3—17 to 22 inches; gravelly loam

*Substratum:*

C—22 to 36 inches; very gravelly fine sandy loam

2R—36 inches; bedrock

**Properties and Qualities**

*Drainage class:* well drained

*Parent material:* coarse-loamy till derived from limestone, sandstone, and shale

*Permeability:* moderate

*Available water capacity:* low

*Reaction:* very strongly acid to moderately acid

*Depth to restrictive feature:* 20 to 40 inches to bedrock (lithic)

*Depth to high water table:* greater than 6 feet

**Interpretative Groups**

*Land capability classification (non-irrigated):* 3e

*Hydrologic group:* C

***Description of Wallpack and similar soils***

The typical sequence, depth, and composition of the layers of the soil are as follows—

*Surface layer:*

Ap1—0 to 3 inches; silt loam

Ap2—3 to 9 inches; gravelly silt loam

*Subsoil layer:*

Bt—9 to 16 inches; gravelly silt loam

Btx1—16 to 25 inches; gravelly silt loam

Btx2—25 to 65 inches; very gravelly silt loam

**Properties and Qualities**

*Drainage class:* well drained

*Parent material:* coarse-loamy till derived from limestone, sandstone, and shale

*Permeability:* very slow to moderately rapid

*Available water capacity:* very low

*Reaction:* strongly acid to slightly alkaline

*Depth to restrictive feature:* 12 to 36 inches to fragipan

*Depth to high water table:* 23 to 45 inches

**Interpretative Groups**

*Land capability classification (non-irrigated):* 3e

*Hydrologic group:* C

***Minor Components***

- Deep, well drained Chadakoin soils
- Very deep, moderately well drained Cambridge soils

## **LorCh—Lordstown-Wallpack complex, 8 to 15 percent slopes, very rocky**

### ***Map Unit Setting***

*Slope:* strongly sloping

*Landscape:* till plains

*Landform:* ridges

*Surface cover:* 3 to 14 percent stones

### ***Map Unit Composition***

*Lordstown and similar soils:* 50 percent

*Wallpack and similar soils:* 35 percent

*Minor components:* 15 percent

### ***Description of Lordstown and similar soils***

The typical sequence, depth, and composition of the layers of the soil are as follows—

#### *Surface layer:*

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 2 inches; loam

#### *Subsurface layer:*

E—2 to 3 inches; fine sandy loam

#### *Subsoil layer:*

Bw1—3 to 5 inches; loam

Bw2—5 to 17 inches; gravelly loam

Bw3—17 to 22 inches; gravelly loam

#### *Substratum:*

C—22 to 36 inches; very gravelly fine sandy loam

2R—36 inches; bedrock

### **Properties and Qualities**

*Drainage class:* well drained

*Parent material:* coarse-loamy till derived from limestone, sandstone, and shale

*Permeability:* moderate

*Available water capacity:* low

*Reaction:* very strongly acid to moderately acid

*Depth to restrictive feature:* 20 to 40 inches to bedrock (lithic)

*Depth to high water table:* greater than 6 feet

### **Interpretative Groups**

*Land capability classification (non-irrigated):* 6s

*Hydrologic group:* C

### ***Description of Wallpack and similar soils***

The typical sequence, depth, and composition of the layers of the soil are as follows—

#### *Surface layer:*

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 2 inches; gravelly silt loam

#### *Subsurface layer:*

AB—2 to 5 inches; gravelly silt loam

*Subsoil layer:*

Bt—5 to 18 inches; gravelly silt loam

Btx—18 to 24 inches; gravelly loam

BCtx1—24 to 42 inches; gravelly silt loam

BCtx2—42 to 60 inches; gravelly loam

**Properties and Qualities***Drainage class:* well drained*Parent material:* coarse-loamy till derived from limestone, sandstone, and shale*Permeability:* very slow to moderately rapid*Available water capacity:* low*Reaction:* strongly acid to slightly alkaline*Depth to restrictive feature:* 12 to 36 inches to fragipan*Depth to high water table:* 20 to 42 inches**Interpretative Groups***Land capability classification (non-irrigated):* 6s*Hydrologic group:* C**Minor Components**

- Very deep, moderately well drained Cambridge soils
- Deep, well drained Chadakoin soils
- Rock outcrop

## **LorD—Lordstown-Wallpack complex, 15 to 25 percent slopes**

**Map Unit Setting***Slope:* moderately steep*Landscape:* till plains*Landform:* ridges**Map Unit Composition***Lordstown and similar soils:* 50 percent*Wallpack and similar soils:* 35 percent*Minor components:* 15 percent**Description of Lordstown and similar soils**

The typical sequence, depth, and composition of the layers of the soil are as follows—

*Surface layer:*

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 2 inches; loam

*Subsurface layer:*

E—2 to 3 inches; fine sandy loam

*Subsoil layer:*

Bw1—3 to 5 inches; loam

Bw2—5 to 17 inches; gravelly loam

Bw3—17 to 22 inches; gravelly loam

*Substratum:*

C—22 to 36 inches; very gravelly fine sandy loam

2R—36 inches; bedrock

**Properties and Qualities**

*Drainage class:* well drained

*Parent material:* coarse-loamy till derived from limestone, sandstone, and shale

*Permeability:* moderate

*Available water capacity:* low

*Reaction:* very strongly acid to moderately acid

*Depth to restrictive feature:* 20 to 40 inches to bedrock (lithic)

*Depth to high water table:* greater than 6 feet

**Interpretative Groups**

*Land capability classification (non-irrigated):* 4e

*Hydrologic group:* C

***Description of Wallpack and similar soils***

The typical sequence, depth, and composition of the layers of the soil are as follows—

*Surface layer:*

Ap1—0 to 3 inches; silt loam

Ap2—3 to 9 inches; gravelly silt loam

*Subsoil layer:*

Bt—9 to 16 inches; gravelly silt loam

Btx1—16 to 25 inches; gravelly silt loam

Btx2—25 to 65 inches; very gravelly silt loam

**Properties and Qualities**

*Drainage class:* well drained

*Parent material:* coarse-loamy till derived from limestone, sandstone, and shale

*Permeability:* very slow to moderately rapid

*Available water capacity:* very low

*Reaction:* strongly acid to slightly alkaline

*Depth to restrictive feature:* 12 to 36 inches to fragipan

*Depth to high water table:* 23 to 45 inches

**Interpretative Groups**

*Land capability classification (non-irrigated):* 4e

*Hydrologic group:* C

***Minor Components***

- Deep, well drained Chadakoin soils
- Very deep, moderately well drained Cambridge soils

**LorDh—Lordstown-Wallpack complex, 15 to 35 percent slopes, very rocky*****Map Unit Setting***

*Slope:* moderately steep or steep

*Landscape:* till plains

*Landform:* ridges

*Surface cover:* 3 to 14 percent stones

***Map Unit Composition***

*Lordstown and similar soils:* 50 percent

*Wallpack and similar soils:* 40 percent

*Minor components:* 10 percent

### ***Description of Lordstown and similar soils***

The typical sequence, depth, and composition of the layers of the soil are as follows—

*Surface layer:*

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 2 inches; loam

*Subsurface layer:*

E—2 to 3 inches; fine sandy loam

*Subsoil layer:*

Bw1—3 to 5 inches; loam

Bw2—5 to 17 inches; gravelly loam

Bw3—17 to 22 inches; gravelly loam

*Substratum:*

C—22 to 36 inches; very gravelly fine sandy loam

2R—36 inches; bedrock

#### **Properties and Qualities**

*Drainage class:* well drained

*Parent material:* coarse-loamy till derived from limestone, sandstone, and shale

*Permeability:* moderate

*Available water capacity:* low

*Reaction:* very strongly acid to moderately acid

*Depth to restrictive feature:* 20 to 40 inches to bedrock (lithic)

*Depth to high water table:* greater than 6 feet

#### **Interpretative Groups**

*Land capability classification (non-irrigated):* 7s

*Hydrologic group:* C

### ***Description of Wallpack and similar soils***

The typical sequence, depth, and composition of the layers of the soil are as follows—

*Surface layer:*

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 2 inches; gravelly silt loam

*Subsurface layer:*

AB—2 to 5 inches; gravelly silt loam

*Subsoil layer:*

Bt—5 to 18 inches; gravelly silt loam

Btx—18 to 24 inches; gravelly loam

BCtx1—24 to 42 inches; gravelly silt loam

BCtx2—42 to 60 inches; gravelly loam

#### **Properties and Qualities**

*Drainage class:* well drained

*Parent material:* coarse-loamy till derived from limestone, sandstone, and shale

*Permeability:* very slow to moderately rapid

*Available water capacity:* low

*Reaction:* strongly acid to slightly alkaline

*Depth to restrictive feature:* 12 to 36 inches to fragipan

*Depth to high water table:* 20 to 42 inches



**Interpretative Groups**

*Land capability classification (non-irrigated): 7s*

*Hydrologic group: C*

**Minor Components**

- Deep, well drained Chadakoin soils
- Rock outcrop

**MabEh—Manlius-Nassau complex, 35 to 60 percent slopes, very rocky****Map Unit Setting**

*Slope:* steep or very steep

*Landscape:* till plains

*Landform:* ridges

*Surface cover:* 3 to 14 percent stones

**Map Unit Composition**

*Manlius and similar soils:* 60 percent

*Nassau and similar soils:* 25 percent

*Minor components:* 15 percent

**Description of Manlius and similar soils**

The typical sequence, depth, and composition of the layers of the soil are as follows—

*Surface layer:*

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 2 inches; very channery silt loam

*Subsoil layer:*

Bw—2 to 18 inches; extremely channery silt loam

*Substratum:*

C—18 to 27 inches; extremely channery silt loam

2R—27 inches; bedrock

**Properties and Qualities**

*Drainage class:* well drained

*Parent material:* loamy till derived from acid shale

*Permeability:* moderate or moderately rapid

*Available water capacity:* very low

*Reaction:* extremely acid to neutral

*Depth to restrictive feature:* 20 to 40 inches to bedrock (lithic)

*Depth to high water table:* greater than 6 feet

**Interpretative Groups**

*Land capability classification (non-irrigated): 7s*

*Hydrologic group: C*

**Description of Nassau similar soils**

The typical sequence, depth, and composition of the layers of the soil are as follows—

*Surface layer:*

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 2 inches; very channery silt loam

*Subsoil layer:*

Bw—2 to 15 inches; extremely channery silt loam

*Substratum:*

2R—15 inches; bedrock

**Properties and Qualities**

*Drainage class:* somewhat excessively drained

*Parent material:* loamy till derived from acid shale

*Permeability:* moderate or moderately rapid

*Available water capacity:* very low

*Reaction:* very strongly acid to neutral

*Depth to restrictive feature:* 10 to 20 inches to bedrock (lithic)

*Depth to high water table:* greater than 6 feet

**Interpretative Groups**

*Land capability classification (non-irrigated):* 7s

*Hydrologic group:* D

**Minor Components**

- Rock outcrop
- Deep, well drained Wallpack soils

## **NauBh—Nassau-Manlius complex, 0 to 8 percent slopes, very rocky**

**Map Unit Setting**

*Slope:* nearly level to gently sloping

*Landscape:* till plains

*Landform:* ground moraines

*Surface cover:* 3 to 14 percent stones

**Map Unit Composition**

*Nassau and similar soils:* 50 percent

*Manlius and similar soils:* 45 percent

*Minor components:* 5 percent

**Description of Nassau and similar soils**

The typical sequence, depth, and composition of the layers of the soil are as follows—

*Surface layer:*

Ap—0 to 7 inches; very channery silt loam

*Subsoil layer:*

Bw—7 to 13 inches; extremely channery silt loam

*Substratum:*

2R—13 inches; bedrock

**Properties and Qualities**

*Drainage class:* somewhat excessively drained

*Parent material:* loamy till derived from acid shale

*Permeability:* moderate or moderately rapid

*Available water capacity:* very low

*Reaction:* very strongly acid to neutral

*Depth to restrictive feature:* 10 to 20 inches to bedrock (lithic)

*Depth to high water table:* greater than 6 feet

#### **Interpretative Groups**

*Land capability classification (non-irrigated):* 6s

*Hydrologic group:* D

#### ***Description of Manlius and similar soils***

The typical sequence, depth, and composition of the layers of the soil are as follows—

*Surface layer:*

Ap—0 to 9 inches; very channery silt loam

*Subsoil layer:*

Bw—9 to 20 inches; extremely channery silt loam

*Substratum:*

CB—20 to 29 inches; extremely channery silt loam

2R—29 inches; bedrock

#### **Properties and Qualities**

*Drainage class:* well drained

*Parent material:* loamy till derived from acid shale

*Permeability:* moderate or moderately rapid

*Available water capacity:* very low

*Reaction:* extremely acid to neutral

*Depth to restrictive feature:* 20 to 40 inches to bedrock (lithic)

*Depth to high water table:* greater than 6 feet

#### **Interpretative Groups**

*Land capability classification (non-irrigated):* 6s

*Hydrologic group:* C

#### ***Minor Components***

- Rock outcrop

### **NauCh—Nassau-Manlius complex, 8 to 15 percent slopes, very rocky**

#### ***Map Unit Setting***

*Slope:* strongly sloping

*Landscape:* till plains

*Landform:* ground moraines

*Surface cover:* 3 to 14 percent stones

#### ***Map Unit Composition***

*Nassau and similar soils:* 55 percent

*Manlius and similar soils:* 40 percent

*Minor components:* 5 percent

### ***Description of Nassau and similar soils***

The typical sequence, depth, and composition of the layers of the soil are as follows—

*Surface layer:*

Ap—0 to 7 inches; very channery silt loam

*Subsoil layer:*

Bw—7 to 13 inches; extremely channery silt loam

*Substratum:*

2R—13 inches; bedrock

#### **Properties and Qualities**

*Drainage class:* somewhat excessively drained

*Parent material:* loamy till derived from acid shale

*Permeability:* moderate or moderately rapid

*Available water capacity:* very low

*Reaction:* very strongly acid to neutral

*Depth to restrictive feature:* 10 to 20 inches to bedrock (lithic)

*Depth to high water table:* greater than 6 feet

#### **Interpretative Groups**

*Land capability classification (non-irrigated):* 6s

*Hydrologic group:* D

### ***Description of Manlius and similar soils***

The typical sequence, depth, and composition of the layers of the soil are as follows—

*Surface layer:*

Ap—0 to 9 inches; very channery silt loam

*Subsoil layer:*

Bw—9 to 20 inches; extremely channery silt loam

*Substratum:*

CB—20 to 29 inches; extremely channery silt loam

2R—29 inches; bedrock

#### **Properties and Qualities**

*Drainage class:* well drained

*Parent material:* loamy till derived from acid shale

*Permeability:* moderate or moderately rapid

*Available water capacity:* very low

*Reaction:* extremely acid to neutral

*Depth to restrictive feature:* 20 to 40 inches to bedrock (lithic)

*Depth to high water table:* greater than 6 feet

#### **Interpretative Groups**

*Land capability classification (non-irrigated):* 6s

*Hydrologic group:* C

### ***Minor Components***

- Rock outcrop

## **NauDh—Nassau-Manlius complex, 15 to 35 percent slopes, very rocky**

### ***Map Unit Setting***

*Slope:* moderately steep or steep  
*Landscape:* till plains  
*Landform:* ground moraines  
*Surface cover:* 3 to 14 percent stones

### ***Map Unit Composition***

*Nassau and similar soils:* 50 percent  
*Manlius and similar soils:* 40 percent  
*Minor components:* 10 percent

### ***Description of Nassau and similar soils***

The typical sequence, depth, and composition of the layers of the soil are as follows—

*Surface layer:*

Ap—0 to 7 inches; very channery silt loam

*Subsoil layer:*

Bw—7 to 13 inches; extremely channery silt loam

*Substratum:*

2R—13 inches; bedrock

### **Properties and Qualities**

*Drainage class:* somewhat excessively drained  
*Parent material:* loamy till derived from acid shale  
*Permeability:* moderate or moderately rapid  
*Available water capacity:* very low  
*Reaction:* very strongly acid to neutral  
*Depth to restrictive feature:* 10 to 20 inches to bedrock (lithic)  
*Depth to high water table:* greater than 6 feet

### **Interpretative Groups**

*Land capability classification (non-irrigated):* 7s  
*Hydrologic group:* D

### ***Description of Manlius and similar soils***

The typical sequence, depth, and composition of the layers of the soil are as follows—

*Surface layer:*

Ap—0 to 9 inches; very channery silt loam

*Subsoil layer:*

Bw—9 to 20 inches; extremely channery silt loam

*Substratum:*

CB—20 to 29 inches; extremely channery silt loam  
2R—29 inches; bedrock

### **Properties and Qualities**

*Drainage class:* well drained  
*Parent material:* loamy till derived from acid shale

*Permeability:* moderate or moderately rapid  
*Available water capacity:* very low  
*Reaction:* extremely acid to neutral  
*Depth to restrictive feature:* 20 to 40 inches to bedrock (lithic)  
*Depth to high water table:* greater than 6 feet

#### **Interpretative Groups**

*Land capability classification (non-irrigated):* 7s  
*Hydrologic group:* C

#### **Minor Components**

- Rock outcrop

### **NavE—Nassau-Rock outcrop complex, 35 to 60 percent slopes**

#### **Map Unit Setting**

*Slope:* steep or very steep  
*Landscape:* till plains  
*Landform:* ground moraines  
*Surface cover:* 3 to 14 percent stones

#### **Map Unit Composition**

*Nassau and similar soils:* 50 percent  
*Rock outcrop and similar soils:* 45 percent  
*Minor components:* 5 percent

#### **Description of Nassau and similar soils**

The typical sequence, depth, and composition of the layers of the soil are as follows—

##### *Surface layer:*

Oi—0 to 1 inch; slightly decomposed plant material  
 A—1 to 2 inches; very channery silt loam

##### *Subsoil layer:*

Bw—2 to 15 inches; extremely channery silt loam

##### *Substratum:*

2R—15 inches; bedrock

#### **Properties and Qualities**

*Drainage class:* somewhat excessively drained  
*Parent material:* loamy till derived from acid shale  
*Permeability:* moderate or moderately rapid  
*Available water capacity:* very low  
*Reaction:* very strongly acid to neutral  
*Depth to restrictive feature:* 10 to 20 inches to bedrock (lithic)  
*Depth to high water table:* greater than 6 feet

#### **Interpretative Groups**

*Land capability classification (non-irrigated):* 7s  
*Hydrologic group:* D

**Description of Rock outcrop**

Rock outcrop typically consists of bedrock exposed at the surface. A description of this component is not provided.

**Properties and Qualities**

*Depth to restrictive feature:* 0 inches to bedrock (lithic)

**Interpretative Groups**

*Land capability classification (non-irrigated):* 8s

*Hydrologic group:* D

**Minor Components**

- Moderately deep, well drained Manlius soils

**OpnCh—Oquaga-Lackawanna complex, 8 to 15 percent slopes, very rocky****Map Unit Setting**

*Slope:* strongly sloping

*Landscape:* mountains

*Landform:* ground moraines

*Surface cover:* 3 to 14 percent stones

**Map Unit Composition**

*Oquaga and similar soils:* 55 percent

*Lackawanna and similar soils:* 30 percent

*Minor components:* 15 percent

**Description of Oquaga and similar soils**

The typical sequence, depth, and composition of the layers of the soil are as follows—

**Surface layer:**

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 4 inches; channery loam

**Subsoil layer:**

Bw—4 to 20 inches; very channery loam

**Substratum:**

C—20 to 25 inches; extremely channery loam

2R—25 inches; bedrock

**Properties and Qualities**

*Drainage class:* somewhat excessively drained

*Parent material:* loamy till derived from red sandstone and siltstone and/or red shale

*Permeability:* moderate

*Available water capacity:* very low

*Reaction:* extremely acid to strongly acid

*Depth to restrictive feature:* 20 to 40 inches to bedrock (lithic)

*Depth to high water table:* greater than 6 feet

**Interpretative Groups**

*Land capability classification (non-irrigated):* 6s

*Hydrologic group:* C

### ***Description of Lackawanna and similar soils***

The typical sequence, depth, and composition of the layers of the soil are as follows—

*Surface layer:*

Oi—0 to 2 inches; slightly decomposed plant material

A—2 to 3 inches; cobbly fine sandy loam

*Subsurface layer:*

E—3 to 7 inches; cobbly fine sandy loam

*Subsoil layer:*

Bhs—7 to 8 inches; cobbly fine sandy loam

Bw1—8 to 16 inches; stony loam

Bw2—16 to 24 inches; stony loam

Bx1—24 to 29 inches; stony fine sandy loam

Bx2—29 to 60 inches; very cobbly fine sandy loam

### **Properties and Qualities**

*Drainage class:* well drained

*Parent material:* coarse-loamy till derived from red shale and/or red sandstone and siltstone

*Permeability:* slow to moderate

*Available water capacity:* low

*Reaction:* extremely acid to strongly acid

*Depth to restrictive feature:* 14 to 36 inches to fragipan

*Depth to high water table:* 20 to 29 inches

### **Interpretative Groups**

*Land classification (non-irrigated):* 6s

*Hydrologic group:* C

### ***Minor Components***

- Rock outcrop
- Very deep, moderately well drained Wellsboro soils

## **OpnDh—Oquaga-Lackawanna complex, 15 to 35 percent slopes, very rocky**

### ***Map Unit Setting***

*Slope:* moderately steep or steep

*Landscape:* mountains

*Landform:* ground moraines

*Surface cover:* 3 to 14 percent stones

### ***Map Unit Composition***

*Oquaga and similar soils:* 50 percent

*Lackawanna and similar soils:* 35 percent

*Minor components:* 15 percent

### ***Description of Oquaga and similar soils***

The typical sequence, depth, and composition of the layers of the soil are as follows—



*Surface layer:*

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 4 inches; channery loam

*Subsoil layer:*

Bw—4 to 20 inches; very channery loam

*Substratum:*

C—20 to 25 inches; extremely channery loam

2R—25 inches; bedrock

**Properties and Qualities***Drainage class:* somewhat excessively drained*Parent material:* loamy till derived from red sandstone and siltstone and/or red shale*Permeability:* moderate*Available water capacity:* very low*Reaction:* extremely acid to strongly acid*Depth to restrictive feature:* 20 to 40 inches to bedrock (lithic)*Depth to high water table:* greater than 6 feet**Interpretative Groups***Land capability classification (non-irrigated):* 7s*Hydrologic group:* C***Description of Lackawanna and similar soils***

The typical sequence, depth, and composition of the layers of the soil are as follows—

*Surface layer:*

Oi—0 to 2 inches; slightly decomposed plant material

A—2 to 3 inches; cobbly fine sandy loam

*Subsurface layer:*

E—3 to 7 inches; cobbly fine sandy loam

*Subsoil layer:*

Bhs—7 to 8 inches; cobbly fine sandy loam

Bw1—8 to 16 inches; stony loam

Bw2—16 to 24 inches; stony loam

Bx1—24 to 29 inches; stony fine sandy loam

Bx2—29 to 60 inches; very cobbly fine sandy loam

**Properties and Qualities***Drainage class:* well drained*Parent material:* coarse-loamy till derived from red shale and/or red sandstone and siltstone*Permeability:* slow to moderate*Available water capacity:* low*Reaction:* extremely acid to strongly acid*Depth to restrictive feature:* 14 to 36 inches to fragipan*Depth to high water table:* 20 to 29 inches**Interpretative Groups***Land capability classification (non-irrigated):* 7s*Hydrologic group:* C***Minor Components***

- Rock outcrop
- Very deep, moderately well drained Wellsboro soils

## **OprC—Oquaga-Rock outcrop complex, 0 to 15 percent slopes**

### ***Map Unit Setting***

*Slope:* nearly level to strongly sloping  
*Landscape:* mountains  
*Landform:* ground moraines  
*Surface cover:* 3 to 14 percent stones

### ***Map Unit Composition***

*Oquaga and similar soils:* 75 percent  
*Rock outcrop and similar soils:* 15 percent  
*Minor components:* 10 percent

### ***Description of Oquaga and similar soils***

The typical sequence, depth, and composition of the layers of the soil are as follows—

#### *Surface layer:*

Oi—0 to 1 inch; slightly decomposed plant material  
 A—1 to 4 inches; channery loam

#### *Subsoil layer:*

Bw—4 to 20 inches; very channery loam

#### *Substratum:*

C—20 to 25 inches; extremely channery loam  
 2R—25 inches; bedrock

### **Properties and Qualities**

*Drainage class:* somewhat excessively drained  
*Parent material:* loamy till derived from red sandstone and siltstone and/or red shale  
*Permeability:* moderate  
*Available water capacity:* very low  
*Reaction:* extremely acid to strongly acid  
*Depth to restrictive feature* 20 to 40 inches to bedrock (lithic)  
*Depth to high water table:* greater than 6 feet

### **Interpretative Groups**

*Land capability classification (non-irrigated):* 6s  
*Hydrologic group:* C

### ***Description of Rock outcrop***

Rock outcrop typically consists of bedrock exposed at the surface. A description of this component is not provided.

### **Properties and Qualities**

*Depth to restrictive feature:* 0 inches to bedrock (lithic)

### **Interpretative Groups**

*Land capability classification (non-irrigated):* 8s  
*Hydrologic group:* D

### ***Minor Components***

- Shallow, somewhat excessively drained Arnot soils
- Very deep, moderately well drained Wellsboro

## **OprE—Oquaga-Rock outcrop complex, 35 to 60 percent slopes**

### ***Map Unit Setting***

*Slope:* steep or very steep

*Landscape:* mountains

*Landform:* ground moraines

*Surface cover:* 3 to 14 percent stones

### ***Map Unit Composition***

*Oquaga and similar soils:* 60 percent

*Rock outcrop and similar soils:* 25 percent

*Minor components:* 15 percent

### ***Description of Oquaga and similar soils***

The typical sequence, depth, and composition of the layers of the soil are as follows—

*Surface layer:*

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 4 inches; channery loam

*Subsoil layer:*

Bw—4 to 20 inches; very channery loam

*Substratum:*

C—20 to 25 inches; extremely channery loam

2R—25 inches; bedrock

### **Properties and Qualities**

*Drainage class:* somewhat excessively drained

*Parent material:* loamy till derived from red sandstone and siltstone and/or red shale

*Permeability:* moderate

*Available water capacity:* very low

*Reaction:* extremely acid to strongly acid

*Depth to restrictive feature:* 20 to 40 inches to bedrock (lithic)

*Depth to high water table:* greater than 6 feet

### **Interpretative Groups**

*Land capability classification (non-irrigated):* 7s

*Hydrologic group:* C

### ***Description of Rock outcrop***

Rock outcrop typically consists of bedrock exposed at the surface. A description of this component is not provided.

### **Properties and Qualities**

*Depth to restrictive feature:* 0 inches to bedrock (lithic)

### **Interpretative Groups**

*Land capability classification (non-irrigated):* 8s

*Hydrologic group:* D

### ***Minor Components***

- Shallow, somewhat excessively drained Arnot soils
- Very deep, well drained Lackawanna soils

## PHG—Pits, sand and gravel

### *Map Unit Composition*

*Pits, sand and gravel:* 95 percent

*Minor components:* 5 percent

### *Description of Pits, sand and gravel*

Pits, sand and gravel typically consists of areas that are mined for sand and gravel, and are either presently being worked or have been abandoned. They are typically associated with areas of glaciofluvial deposits from which the soil series Hazen, Hinckley, Hoosic, Otisville, and Riverhead formed. A description of this component is not provided.

### **Interpretative Groups**

*Land capability classification (non-irrigated):* not specified

*Hydrologic group:* not specified

### *Minor Components*

- Water

## PohA—Pompton sandy loam, 0 to 3 percent slopes

### *Map Unit Setting*

*Slope:* nearly level

*Landscape:* delta plains

*Landform:* outwash plains

### *Map Unit Composition*

*Pompton and similar soils:* 80 percent

*Minor components:* 20 percent

### *Description of Pompton and similar soils*

The typical sequence, depth, and composition of the layers of the soil are as follows—

#### *Surface layer:*

Oe—0 to 2 inches; moderately decomposed plant material

Oa—2 to 4 inches; highly decomposed plant material

A—4 to 8 inches; sandy loam

#### *Subsoil layer:*

Bw1—8 to 15 inches; sandy loam

Bw2—15 to 20 inches; sandy loam

Bw3—20 to 24 inches; loamy sand

Bw4—24 to 32 inches; sandy loam

BC—32 to 40 inches; loamy sand

#### *Substratum:*

C1—40 to 47 inches; sand

C2—47 to 60 inches; fine sand

### **Properties and Qualities**

*Drainage class:* somewhat poorly drained

*Parent material:* coarse-loamy outwash derived from gneiss, sandstone and basalt

*Permeability:* moderately rapid to very rapid

*Available water capacity:* moderate

*Reaction:* very strongly acid to strongly acid

*Depth to high water table:* 6 to 18 inches

**Interpretative Groups**

*Land capability classification (non-irrigated):* 2w

*Hydrologic group:* B/D

***Minor Components***

- Very deep, poorly drained Preakness soils
- Very deep, moderately well drained Horseneck soils

**QY—Pits, quarry**

***Map Unit Composition***

*Pits, quarry:* 100 percent

***Description of Pits, quarry***

Pits, quarry typically consists of areas that are mined for bedrock material, and are either presently being worked or have been abandoned. A description of this component is not provided.

**Interpretative Groups**

*Land capability classification (non-irrigated):* not specified

*Hydrologic group:* not specified

**RkrB—Riverhead sandy loam, 3 to 8 percent slopes**

***Map Unit Setting***

*Slope:* gently sloping

*Landscape:* outwash plains

*Landform:* outwash fans

***Map Unit Composition***

*Riverhead and similar soils:* 85 percent

*Minor components:* 15 percent

***Description of Riverhead and similar soils***

The typical sequence, depth, and composition of the layers of the soil are as follows—

*Surface layer:*

Ap—0 to 13 inches; sandy loam

*Subsoil layer:*

Bw1—13 to 23 inches; sandy loam

Bw2—23 to 33 inches; gravelly sandy loam

*Substratum:*

2C1—33 to 41 inches; sand

2C2—41 to 60 inches; sand

**Properties and Qualities***Drainage class:* well drained*Parent material:* glaciofluvial deposits derived from granite and gneiss*Permeability:* moderately rapid to very rapid*Available water capacity:* low*Reaction:* extremely acid to strongly acid*Depth to high water table:* 28 to 41 inches**Interpretative Groups***Land capability classification (non-irrigated):* 2e*Hydrologic group:* B**Minor Components**

- Very deep, excessively drained Hinckley soils
- Very deep, moderately well drained Horseneck soils

**RnaF—Rock outcrop-Arnot-Rubble land complex, 60 to 80 percent slopes****Map Unit Setting***Slope:* very steep*Landscape:* mountains*Landform:* ground moraines*Surface cover:* 15 to 49 percent stones on non-Rubble land areas**Map Unit Composition***Rock outcrop and similar soils:* 40 percent*Arnot and similar soils:* 30 percent*Rubble land and similar soils:* 20 percent*Minor components:* 10 percent**Description of Rock outcrop**

Rock outcrop typically consists of bedrock exposed at the surface. A description of this component is not provided.

**Properties and Qualities***Depth to restrictive feature:* 0 inches to bedrock (lithic)**Interpretative Groups***Land capability classification (non-irrigated):* 8s*Hydrologic group:* D**Description of Arnot and similar soils**

The typical sequence, depth, and composition of the layers of the soil are as follows—

*Surface layer:*

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 2 inches; loam

*Subsurface layer:*

E—2 to 3 inches; fine sandy loam

*Subsoil layer:*

Bhs—3 to 4 inches; fine sandy loam

Bw1—4 to 12 inches; very gravelly loam  
 Bw2—12 to 17 inches; extremely gravelly loam

*Substratum:*

2R—17 inches; bedrock

#### **Properties and Qualities**

*Drainage class:* somewhat excessively drained

*Parent material:* loamy till derived from conglomerate

*Permeability:* moderate or moderately rapid

*Available water capacity:* very low

*Reaction:* extremely acid to moderately acid

*Depth to restrictive feature:* 10 to 20 inches to bedrock (lithic)

*Depth to high water table:* greater than 6 feet

#### **Interpretative Groups**

*Land capability classification (non-irrigated):* 7s

*Hydrologic group:* D

#### **Description of Rubble land**

The typical sequence, depth, and composition of the layers of the soil are as follows—

*Substratum:*

C—0 to 60 inches; stones

#### **Properties and Qualities**

*Drainage class:* excessively drained

*Parent material:* talus derived from conglomerate

*Permeability:* very rapid

*Available water capacity:* low

*Depth to high water table:* greater than 6 feet

#### **Interpretative Groups**

*Land capability classification (non-irrigated):* 8s

*Hydrologic group:* D

#### **Minor Components**

- Moderately deep, well drained Lordstown soils

### **RnfC—Rock outcrop-Farmington-Galway complex, 8 to 15 percent slopes**

#### **Map Unit Setting**

*Slope:* strongly sloping

*Landscape:* till plains

*Landform:* ground moraines

*Surface cover:* 3 to 14 percent stones

#### **Map Unit Composition**

*Rock outcrop and similar soils:* 40 percent

*Farmington and similar soils:* 35 percent

*Galway and similar soils:* 25 percent

### ***Description of Rock outcrop***

Rock outcrop typically consists of bedrock exposed at the surface (fig. 3). A description of this component is not provided.

#### **Properties and Qualities**

*Depth to restrictive feature:* 0 inches to bedrock (lithic)

#### **Interpretative Groups**

*Land capability classification (non-irrigated):* 8s

*Hydrologic group:* D

### ***Description of Farmington and similar soils***

The typical sequence, depth, and composition of the layers of the soil are as follows—

#### *Surface layer:*

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 3 inches; silt loam

#### *Subsoil layer:*

Bw1—3 to 9 inches; silt loam

Bw2—9 to 15 inches; silt loam

#### *Substratum:*

2R—15 inches; bedrock

#### **Properties and Qualities**

*Drainage class:* well drained

*Parent material:* loamy till derived from limestone and dolomite



Figure 3.—An outcropping of dolomite bedrock in an area of Rock outcrop–Farmington–Galway complex, 8 to 15 percent slopes.



*Permeability:* moderate or moderately rapid  
*Available water capacity:* very low  
*Reaction:* strongly acid to slightly alkaline  
*Depth to restrictive feature:* 10 to 20 inches to bedrock (lithic)  
*Depth to high water table:* greater than 6 feet

#### **Interpretative Groups**

*Land capability classification (non-irrigated):* 6s  
*Hydrologic group:* D

#### ***Description of Galway and similar soils***

The typical sequence, depth, and composition of the layers of the soil are as follows—

##### *Surface layer:*

Oi—0 to 2 inches; slightly decomposed plant material  
 Oe—2 to 3 inches; moderately decomposed plant material  
 A—3 to 5 inches; loam

##### *Subsoil layer:*

Bw1—5 to 15 inches; gravelly loam  
 Bw2—15 to 24 inches; gravelly loam

##### *Substratum:*

2R—24 inches; bedrock

#### **Properties and Qualities**

*Drainage class:* well drained  
*Parent material:* coarse-loamy till derived from limestone and dolomite  
*Permeability:* moderate  
*Available water capacity:* low  
*Reaction:* very strongly acid to slightly alkaline  
*Depth to restrictive feature:* 20 to 40 inches to bedrock (lithic)  
*Depth to high water table:* greater than 6 feet

#### **Interpretative Groups**

*Land capability classification (non-irrigated):* 6s  
*Hydrologic group:* C

## **RnfD—Rock outcrop-Farmington-Galway complex, 15 to 35 percent slopes**

#### ***Map Unit Setting***

*Slope:* moderately steep or steep  
*Landscape:* till plains  
*Landform:* ground moraines  
*Surface cover:* 3 to 14 percent stones

#### ***Map Unit Composition***

*Rock outcrop and similar soils:* 50 percent  
*Farmington and similar soils:* 40 percent  
*Galway and similar soils:* 10 percent

#### ***Description of Rock outcrop***

Rock outcrop typically consists of bedrock exposed at the surface. A description of this component is not provided.

**Properties and Qualities**

*Depth to restrictive feature:* 0 inches to bedrock (lithic)

**Interpretative Groups**

*Land capability classification (non-irrigated):* 8s

*Hydrologic group:* D

***Description of Farmington and similar soils***

The typical sequence, depth, and composition of the layers of the soil are as follows—

*Surface layer:*

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 3 inches; silt loam

*Subsoil layer:*

Bw1—3 to 9 inches; silt loam

Bw2—9 to 15 inches; silt loam

*Substratum:*

2R—15 inches; bedrock

**Properties and Qualities**

*Drainage class:* well drained

*Parent material:* loamy till derived from limestone and dolomite

*Permeability:* moderate or moderately rapid

*Available water capacity:* very low

*Reaction:* strongly acid to slightly alkaline

*Depth to restrictive feature:* 10 to 20 inches to bedrock (lithic)

*Depth to high water table:* greater than 6 feet

**Interpretative Groups**

*Land capability classification (non-irrigated):* 7s

*Hydrologic group:* D

***Description of Galway and similar soils***

The typical sequence, depth, and composition of the layers of the soil are as follows—

*Surface layer:*

Oi—0 to 2 inches; slightly decomposed plant material

Oe—2 to 3 inches; moderately decomposed plant material

A—3 to 5 inches; loam

*Subsoil layer:*

Bw1—5 to 15 inches; gravelly loam

Bw2—15 to 24 inches; gravelly loam

*Substratum:*

2R—24 inches; bedrock

**Properties and Qualities**

*Drainage class:* well drained

*Parent material:* coarse-loamy till derived from limestone and dolomite

*Permeability:* moderate

*Available water capacity:* low

*Reaction:* very strongly acid to slightly alkaline

*Depth to restrictive feature:* 20 to 40 inches to bedrock (lithic)

*Depth to high water table:* greater than 6 feet

**Interpretative Groups**

*Land capability classification (non-irrigated):* 7s

*Hydrologic group:* C

**RoefBc—Rockaway loam, thin fragipan, 0 to 8 percent slopes, extremely stony**

***Map Unit Setting***

*Slope:* nearly level to gently sloping

*Landscape:* till plains

*Landform:* ground moraines

*Surface cover:* 3 to 14 percent stones

***Map Unit Composition***

*Rockaway, thin fragipan, and similar soils:* 85 percent

*Minor components:* 15 percent

***Description of Rockaway, thin fragipan, and similar soils***

The typical sequence, depth, and composition of the layers of the soil are as follows—

*Surface layer:*

Oi—0 to 2 inches; slightly decomposed plant material

A—2 to 3 inches; loam

*Subsoil layer:*

BA—3 to 6 inches; loam

Bt—6 to 23 inches; gravelly loam

Bx—23 to 41 inches; gravelly sandy loam

*Substratum:*

C—41 to 60 inches; gravelly sandy loam

**Properties and Qualities**

*Drainage class:* well drained

*Parent material:* coarse-loamy till derived from granite and gneiss and/or limestone, sandstone, and shale and/or quartzite

*Permeability:* very slow to moderately rapid

*Available water capacity:* low

*Reaction:* very strongly acid to strongly acid

*Depth to restrictive feature:* 18 to 40 inches to fragipan

*Depth to high water table:* 18 to 40 inches

**Interpretative Groups**

*Land capability classification (non-irrigated):* 7s

*Hydrologic group:* C

***Minor Components***

- Very deep, moderately well drained Rockaway soils
- Moderately deep, well drained Chatfield soils

## **RoefCc—Rockaway loam, thin fragipan, 8 to 15 percent slopes, extremely stony**

### ***Map Unit Setting***

*Slope:* strongly sloping

*Landscape:* till plains

*Landform:* ground moraines

*Surface cover:* 3 to 14 percent stones

### ***Map Unit Composition***

*Rockaway, thin fragipan, and similar soils:* 85 percent

*Minor components:* 15 percent

### ***Description of Rockaway, thin fragipan, and similar soils***

The typical sequence, depth, and composition of the layers of the soil are as follows—

*Surface layer:*

Oi—0 to 2 inches; slightly decomposed plant material

A—2 to 3 inches; loam

*Subsoil layer:*

BA—3 to 6 inches; loam

Bt—6 to 23 inches; gravelly loam

Bx—23 to 41 inches; gravelly sandy loam

*Substratum:*

C—41 to 60 inches; gravelly sandy loam

### **Properties and Qualities**

*Drainage class:* well drained

*Parent material:* coarse-loamy till derived from granite and gneiss and/or limestone, sandstone, and shale and/or quartzite

*Permeability:* very slow to moderately rapid

*Available water capacity:* low

*Reaction:* very strongly acid to strongly acid

*Depth to restrictive feature:* 18 to 40 inches to fragipan

*Depth to high water table:* 18 to 40 inches

### **Interpretative Groups**

*Land capability classification (non-irrigated):* 7s

*Hydrologic group:* C

### ***Minor Components***

- Very deep, moderately well drained Rockaway soils
- Moderately deep, well drained Chatfield soils

## **RoefDc—Rockaway loam, thin fragipan, 15 to 35 percent slopes, extremely stony**

### ***Map Unit Setting***

*Slope:* moderately steep or steep

*Landscape:* till plains

*Landform:* ground moraines

*Surface cover:* 3 to 14 percent stones

### **Map Unit Composition**

*Rockaway, thin fragipan, and similar soils:* 85 percent

*Minor components:* 15 percent

### **Description of Rockaway, thin fragipan, and similar soils**

The typical sequence, depth, and composition of the layers of the soil are as follows—

#### *Surface layer:*

Oi—0 to 2 inches; slightly decomposed plant material

A—2 to 3 inches; loam

#### *Subsoil layer:*

BA—3 to 6 inches; loam

Bt—6 to 23 inches; gravelly loam

Bx—23 to 41 inches; gravelly sandy loam

#### *Substratum:*

C—41 to 60 inches; gravelly sandy loam

### **Properties and Qualities**

*Drainage class:* well drained

*Parent material:* coarse-loamy till derived from granite and gneiss and/or limestone, sandstone, and shale and/or quartzite

*Permeability:* very slow to moderately rapid

*Available water capacity:* low

*Reaction:* very strongly acid to strongly acid

*Depth to restrictive feature:* 18 to 40 inches to fragipan

*Depth to high water table:* 18 to 40 inches

### **Interpretative Groups**

*Land capability classification (non-irrigated):* 7s

*Hydrologic group:* C

### **Minor Components**

- Very deep, moderately well drained Rockaway soils
- Moderately deep, well drained Chatfield soils

## **RokB—Rockaway-Chatfield-Rock outcrop complex, 0 to 8 percent slopes**

### **Map Unit Setting**

*Slope:* nearly level to gently sloping

*Landscape:* mountains

*Landform:* ground moraines

*Surface cover:* 3 to 14 percent stones

### **Map Unit Composition**

*Rockaway, thin fragipan, and similar soils:* 50 percent

*Chatfield and similar soils:* 30 percent

*Rock outcrop and similar soils:* 20 percent

***Description of Rockaway, thin fragipan, and similar soils***

The typical sequence, depth, and composition of the layers of the soil are as follows—

***Surface layer:***

Oi—0 to 2 inches; slightly decomposed plant material

A—2 to 3 inches; loam

***Subsoil layer:***

BA—3 to 6 inches; loam

Bt—6 to 23 inches; gravelly loam

Bx—23 to 41 inches; gravelly sandy loam

***Substratum:***

C—41 to 60 inches; gravelly sandy loam

**Properties and Qualities**

*Drainage class:* well drained

*Parent material:* coarse-loamy till derived from granite and gneiss and/or limestone, sandstone, and shale and/or quartzite

*Permeability:* very slow to moderately rapid

*Available water capacity:* low

*Reaction:* very strongly acid to strongly acid

*Depth to restrictive feature:* 18 to 40 inches to fragipan

*Depth to high water table:* 18 to 40 inches

**Interpretative Groups**

*Land capability classification (non-irrigated):* 6s

*Hydrologic group:* C

***Description of Chatfield and similar soils***

The typical sequence, depth, and composition of the layers of the soil are as follows—

***Surface layer:***

Oi—0 to 1 inch; slightly decomposed plant material

Oa—1 to 3 inches; highly decomposed plant material

A—3 to 5 inches; cobbly loam

***Subsoil layer:***

Bw1—5 to 10 inches; cobbly loam

Bw2—10 to 24 inches; cobbly sandy loam

BC—24 to 30 inches; cobbly sandy loam

***Substratum:***

2R—30 inches; bedrock

**Properties and Qualities**

*Drainage class:* well drained

*Parent material:* coarse-loamy till derived from granite and gneiss

*Permeability:* moderate or moderately rapid

*Available water capacity:* low

*Reaction:* very strongly acid to moderately acid

*Depth to restrictive feature:* 20 to 40 inches to bedrock (lithic)

*Depth to high water table:* greater than 6 feet

**Interpretative Groups**

*Land capability classification (non-irrigated):* 6s

*Hydrologic group:* C

### ***Description of Rock outcrop***

Rock outcrop typically consists of bedrock exposed at the surface. A description of this component is not provided.

#### **Properties and Qualities**

*Depth to restrictive feature:* 0 inches to bedrock (lithic)

#### **Interpretative Groups**

*Land capability classification (non-irrigated):* 8s

*Hydrologic group:* D

## **RokC—Rockaway-Chatfield-Rock outcrop complex, 8 to 15 percent slopes**

### ***Map Unit Setting***

*Slope:* strongly sloping

*Landscape:* mountains

*Landform:* ground moraines

*Surface cover:* 3 to 14 percent stones

### ***Map Unit Composition***

*Rockaway, thin fragipan, and similar soils:* 45 percent

*Chatfield and similar soils:* 40 percent

*Rock outcrop and similar soils:* 15 percent

### ***Description of Rockaway, thin fragipan, and similar soils***

The typical sequence, depth, and composition of the layers of the soil are as follows—

#### ***Surface layer:***

Oi—0 to 2 inches; slightly decomposed plant material

A—2 to 3 inches; loam

#### ***Subsoil layer:***

BA—3 to 6 inches; loam

Bt—6 to 23 inches; gravelly loam

Bx—23 to 41 inches; gravelly sandy loam

#### ***Substratum:***

C—41 to 60 inches; gravelly sandy loam

#### **Properties and Qualities**

*Drainage class:* well drained

*Parent material:* coarse-loamy till derived from granite and gneiss and/or limestone, sandstone, and shale and/or quartzite

*Permeability:* very slow to moderately rapid

*Available water capacity:* low

*Reaction:* very strongly acid to strongly acid

*Depth to restrictive feature:* 18 to 40 inches to fragipan

*Depth to high water table:* 18 to 40 inches

#### **Interpretative Groups**

*Land capability classification (non-irrigated):* 6s

*Hydrologic group:* C

### ***Description of Chatfield and similar soils***

The typical sequence, depth, and composition of the layers of the soil are as follows—

*Surface layer:*

Oi—0 to 1 inch; slightly decomposed plant material  
Oa—1 to 3 inches; highly decomposed plant material  
A—3 to 5 inches; cobbly loam

*Subsoil layer:*

Bw1—5 to 10 inches; cobbly loam  
Bw2—10 to 24 inches; cobbly sandy loam  
BC—24 to 30 inches; cobbly sandy loam

*Substratum:*

2R—30 inches; bedrock

#### **Properties and Qualities**

*Drainage class:* well drained

*Parent material:* coarse-loamy till derived from granite and gneiss

*Permeability:* moderate to moderately rapid

*Available water capacity:* low

*Reaction:* very strongly acid to moderately acid

*Depth to restrictive feature:* 20 to 40 inches to bedrock (lithic)

*Depth to high water table:* greater than 6 feet

#### **Interpretative Groups**

*Land capability classification (non-irrigated):* 6s

*Hydrologic group:* C

### ***Description of Rock outcrop***

Rock outcrop typically consists of bedrock exposed at the surface. A description of this component is not provided.

#### **Properties and Qualities**

*Depth to restrictive feature:* 0 inches to bedrock (lithic)

#### **Interpretative Groups**

*Land capability classification (non-irrigated):* 8s

*Hydrologic group:* D

## **RokD—Rockaway-Chatfield-Rock outcrop complex, 15 to 35 percent slopes**

### ***Map Unit Setting***

*Slope:* moderately steep or steep

*Landscape:* mountains

*Landform:* ground moraines

*Surface cover:* 3 to 14 percent stones

### ***Map Unit Composition***

*Rockaway, thin fragipan, and similar soils:* 45 percent

*Chatfield and similar soils:* 25 percent

*Rock outcrop and similar soils:* 20 percent

*Minor components:* 10 percent



***Description of Rockaway, thin fragipan, and similar soils***

The typical sequence, depth, and composition of the layers of the soil are as follows—

***Surface layer:***

Oi—0 to 2 inches; slightly decomposed plant material

A—2 to 3 inches; loam

***Subsoil layer:***

BA—3 to 6 inches; loam

Bt—6 to 23 inches; gravelly loam

Bx—23 to 41 inches; gravelly sandy loam

***Substratum:***

C—41 to 60 inches; gravelly sandy loam

**Properties and Qualities**

*Drainage class:* well drained

*Parent material:* coarse-loamy till derived from granite and gneiss and/or limestone, sandstone, and shale and/or quartzite

*Permeability:* very slow to moderately rapid

*Available water capacity:* low

*Reaction:* very strongly acid to strongly acid

*Depth to restrictive feature:* 18 to 40 inches to fragipan

*Depth to high water table:* 18 to 40 inches

**Interpretative Groups**

*Land capability classification (non-irrigated):* 7s

*Hydrologic group:* C

***Description of Chatfield and similar soils***

The typical sequence, depth, and composition of the layers of the soil are as follows—

***Surface layer:***

Oi—0 to 1 inch; slightly decomposed plant material

Oa—1 to 3 inches; highly decomposed plant material

A—3 to 5 inches; cobbly loam

***Subsoil layer:***

Bw1—5 to 10 inches; cobbly loam

Bw2—10 to 24 inches; cobbly sandy loam

BC—24 to 30 inches; cobbly sandy loam

***Substratum:***

2R—30 inches; bedrock

**Properties and Qualities**

*Drainage class:* well drained

*Parent material:* coarse-loamy till derived from granite and gneiss

*Permeability:* moderate or moderately rapid

*Available water capacity:* low

*Reaction:* very strongly acid to moderately acid

*Depth to restrictive feature:* 20 to 40 inches to bedrock (lithic)

*Depth to high water table:* greater than 6 feet

**Interpretative Groups**

*Land capability classification (non-irrigated):* 7s

*Hydrologic group:* C

### ***Description of Rock outcrop***

Rock outcrop typically consists of bedrock exposed at the surface. A description of this component is not provided.

#### **Properties and Qualities**

*Depth to restrictive feature:* 0 inches to bedrock (lithic)

#### **Interpretative Groups**

*Land capability classification (non-irrigated):* 8s

*Hydrologic group:* D

### ***Minor Components***

- Shallow, well drained Hollis soils

## **RooB—Rockaway-Urban land complex, thin fragipans, 0 to 8 percent slopes**

### ***Map Unit Setting***

*Landscape:* till plains

*Landform:* ground moraines

### ***Map Unit Composition***

*Rockaway, thin fragipan, and similar soils:* 50 percent

*Urban land, Rockaway thin fragipan substratum, and similar soils:* 40 percent

*Minor components:* 10 percent

### ***Description of Rockaway, thin fragipan, and similar soils***

The typical sequence, depth, and composition of the layers of the soil are as follows—

#### ***Surface layer:***

Oi—0 to 2 inches; slightly decomposed plant material

A—2 to 3 inches; loam

#### ***Subsoil layer:***

BA—3 to 6 inches; loam

Bt—6 to 23 inches; gravelly loam

Bx—23 to 41 inches; gravelly sandy loam

#### ***Substratum:***

C—41 to 60 inches; gravelly sandy loam

#### **Properties and Qualities**

*Drainage class:* well drained

*Parent material:* coarse-loamy till derived from granite and gneiss and/or limestone, sandstone, and shale and/or quartzite

*Permeability:* very slow to moderately rapid

*Available water capacity:* low

*Reaction:* very strongly acid or strongly acid

*Depth to restrictive feature:* 18 to 40 inches to fragipan

*Depth to high water table:* 18 to 40 inches

#### **Interpretative Groups**

*Land capability classification (non-irrigated):* 2e

*Hydrologic group:* C

***Description of Urban land, Rockaway thin fragipan substratum, and similar soils***

The typical sequence, depth, and composition of the layers of the soil are as follows—

*Surface layer:*

H1—0 to 12 inches; impervious material

H2—12 to 23 inches; gravelly loam

*Substratum:*

2C1—23 to 41 inches; gravelly sandy loam

2C2—41 to 60 inches; gravelly sandy loam

**Properties and Qualities**

*Drainage class:* none specified

*Parent material:* buildings, pavement, and other impervious surfaces over coarse-loamy till derived from granite and gneiss

*Permeability:* very slow to moderately rapid

*Available water capacity:* very low

*Reaction:* very strongly acid or strongly acid

*Depth to restrictive feature:* 18 to 40 inches to fragipan

*Depth to high water table:* 18 to 40 inches

**Interpretative Groups**

*Land capability classification (non-irrigated):* 8s

*Hydrologic group:* D

***Minor Components***

- Moderately deep, well drained Chatfield soils
- Very deep, moderately well drained Rockaway soils

**RooC—Rockaway-Urban land complex, thin fragipans, 0 to 15 percent slopes**

***Map Unit Setting***

*Landscape:* till plains

*Landform:* ground moraines

***Map Unit Composition***

*Rockaway, thin fragipan, and similar soils:* 45 percent

*Urban land, Rockaway thin fragipan substratum, and similar soils:* 40 percent

*Minor components:* 15 percent

***Description of Rockaway, thin fragipan, and similar soils***

The typical sequence, depth, and composition of the layers of the soil are as follows—

*Surface layer:*

Oi—0 to 2 inches; slightly decomposed plant material

A—2 to 3 inches; loam

*Subsoil layer:*

BA—3 to 6 inches; loam

Bt—6 to 23 inches; gravelly loam

Bx—23 to 41 inches; gravelly sandy loam

*Substratum:*

C—41 to 60 inches; gravelly sandy loam

**Properties and Qualities**

*Drainage class:* well drained

*Parent material:* coarse-loamy till derived from granite and gneiss and/or limestone, sandstone, and shale and/or quartzite

*Permeability:* very slow to moderately rapid

*Available water capacity:* low

*Reaction:* very strongly acid or strongly acid

*Depth to restrictive feature:* 18 to 40 inches to fragipan

*Depth to high water table:* 18 to 40 inches

**Interpretative Groups**

*Land capability classification (non-irrigated):* 3e

*Hydrologic group:* C

***Description of Urban land, Rockaway thin  
fragipan substratum, and similar soils***

The typical sequence, depth, and composition of the layers of the soil are as follows—

*Surface layer:*

H1—0 to 12 inches; impervious material

H2—12 to 23 inches; gravelly loam

*Substratum:*

2C1—23 to 41 inches; gravelly sandy loam

2C2—41 to 60 inches; gravelly sandy loam

**Properties and Qualities**

*Drainage class:* none specified

*Parent material:* buildings, pavement, and other impervious surfaces over coarse-loamy till derived from granite and gneiss

*Permeability:* very slow to moderately rapid

*Available water capacity:* very low

*Reaction:* very strongly acid or strongly acid

*Depth to restrictive feature:* 18 to 40 inches to fragipan

*Depth to high water table:* 18 to 40 inches

**Interpretative Groups**

*Land capability classification (non-irrigated):* 8s

*Hydrologic group:* D

***Minor Components***

- Very deep, moderately well drained Rockaway soils
- Moderately deep, well drained Chatfield soils

**RooD—Rockaway-Urban land complex, thin fragipans, 0  
to 25 percent slopes**

***Map Unit Setting***

*Landscape:* till plains

*Landform:* ground moraines

### **Map Unit Composition**

*Rockaway, thin fragipan, and similar soils:* 45 percent

*Urban land, Rockaway thin fragipan substratum, and similar soils:* 40 percent

*Minor components:* 15 percent

### **Description of Rockaway, thin fragipan, and similar soils**

The typical sequence, depth, and composition of the layers of the soil are as follows—

#### *Surface layer:*

Oi—0 to 2 inches; slightly decomposed plant material

A—2 to 3 inches; loam

#### *Subsoil layer:*

BA—3 to 6 inches; loam

Bt—6 to 23 inches; gravelly loam

Bx—23 to 41 inches; gravelly sandy loam

#### *Substratum:*

C—41 to 60 inches; gravelly sandy loam

### **Properties and Qualities**

*Drainage class:* well drained

*Parent material:* coarse-loamy till derived from granite and gneiss and/or limestone, sandstone, and shale and/or quartzite

*Permeability:* very slow to moderately rapid

*Available water capacity:* low

*Reaction:* very strongly acid or strongly acid

*Depth to restrictive feature:* 18 to 40 inches to fragipan

*Depth to high water table:* 18 to 40 inches

### **Interpretative Groups**

*Land capability classification (non-irrigated):* 4e

*Hydrologic group:* C

### **Description of Urban land, Rockaway thin fragipan substratum, and similar soils**

The typical sequence, depth, and composition of the layers of the soil are as follows—

#### *Surface layer:*

H1—0 to 12 inches; impervious material

H2—12 to 23 inches; gravelly loam

#### *Substratum:*

2C1—23 to 41 inches; gravelly sandy loam

2C2—41 to 60 inches; gravelly sandy loam

### **Properties and Qualities**

*Drainage class:* none specified

*Parent material:* buildings, pavement, and other impervious surfaces over coarse-loamy till derived from granite and gneiss

*Permeability:* very slow to moderately rapid

*Available water capacity:* very low

*Reaction:* very strongly acid or strongly acid

*Depth to restrictive feature:* 18 to 40 inches to fragipan

*Depth to high water table:* 18 to 40 inches

**Interpretative Groups***Land capability classification (non-irrigated): 8s**Hydrologic group: D***Minor Components**

- Very deep, moderately well drained Rockaway soils
- Moderately deep, well drained Chatfield soils

**ScoA—Scio silt loam, 0 to 3 percent slopes****Map Unit Setting***Slope: nearly level**Landscape: river valleys**Landform: inner terraces***Map Unit Composition***Scio and similar soils: 80 percent**Minor components: 20 percent***Description of Scio and similar soils**

The typical sequence, depth, and composition of the layers of the soil are as follows—

*Surface layer:*

Ap1—0 to 6 inches; silt loam

Ap2—6 to 13 inches; silt loam

*Subsoil layer:*

Bw1—13 to 23 inches; silt loam

Bw2—23 to 28 inches; silt loam

BC—28 to 50 inches; silt loam

*Substratum:*

C1—50 to 59 inches; silt loam

C2—59 to 72 inches; silt loam

**Properties and Qualities***Drainage class: moderately well drained**Parent material: post glacial coarse-silty alluvium**Permeability: moderate**Available water capacity: high**Reaction: extremely acid to slightly alkaline**Depth to high water table: 18 to 24 inches***Interpretative Groups***Land capability classification (non-irrigated): 2w**Hydrologic group: C***Minor Components**

- Very deep, well drained Unadilla soils
- Very deep, somewhat poorly drained Aeric Endoaquepts, postglacial alluvium soils

**SwfBc—Swartswood loam, 0 to 8 percent slopes,  
extremely stony*****Map Unit Setting***

*Slope:* nearly level to gently sloping

*Landscape:* till plains

*Landform:* ground moraines

*Surface cover:* 3 to 14 percent stones

***Map Unit Composition***

*Swartswood and similar soils:* 90 percent

*Minor components:* 10 percent

***Description of Swartswood and similar soils***

The typical sequence, depth, and composition of the layers of the soil are as follows—

*Surface layer:*

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 2 inches; loam

*Subsurface layer:*

E—2 to 3 inches; fine sandy loam

*Subsoil layer:*

Bhs—3 to 4 inches; gravelly fine sandy loam

Bw—4 to 21 inches; gravelly fine sandy loam

Bx1—21 to 32 inches; gravelly sandy loam

Bx2—32 to 60 inches; gravelly sandy loam

**Properties and Qualities**

*Drainage class:* well drained

*Parent material:* coarse-loamy till derived from conglomerate and/or gray and red sandstone

*Permeability:* slow to moderately rapid

*Available water capacity:* very low

*Reaction:* extremely acid to strongly acid

*Depth to restrictive feature:* 20 to 36 inches to fragipan

*Depth to high water table:* 20 to 36 inches

**Interpretative Groups**

*Land capability classification (non-irrigated):* 7s

*Hydrologic group:* C

***Minor Components***

- Deep, moderately well drained Wurtsboro soils

**SwfCc—Swartswood loam, 8 to 15 percent slopes,  
extremely stony*****Map Unit Setting***

*Slope:* strongly sloping

*Landscape:* till plains

*Landform:* ground moraines

*Surface cover:* 3 to 14 percent stones

### **Map Unit Composition**

*Swartswood and similar soils:* 90 percent

*Minor components:* 10 percent

### **Description of Swartswood and similar soils**

The typical sequence, depth, and composition of the layers of the soil are as follows—

*Surface layer:*

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 2 inches; loam

*Subsurface layer:*

E—2 to 3 inches; fine sandy loam

*Subsoil layer:*

Bhs—3 to 4 inches; gravelly fine sandy loam

Bw—4 to 21 inches; gravelly fine sandy loam

Bx1—21 to 32 inches; gravelly sandy loam

Bx2—32 to 60 inches; gravelly sandy loam

### **Properties and Qualities**

*Drainage class:* well drained

*Parent material:* coarse-loamy till derived from conglomerate and/or gray and red sandstone

*Permeability:* slow to moderately rapid

*Available water capacity:* very low

*Reaction:* extremely acid to strongly acid

*Depth to restrictive feature:* 20 to 36 inches to fragipan

*Depth to high water table:* 20 to 36 inches

### **Interpretative Groups**

*Land capability classification (non-irrigated):* 7s

*Hydrologic group:* C

### **Minor Components**

- Deep, moderately well drained Wurtsboro soils

## **SwfDc—Swartswood loam, 15 to 35 percent slopes, extremely stony**

### **Map Unit Setting**

*Slope:* moderately steep or steep

*Landscape:* till plains

*Landform:* ground moraines

*Surface cover:* 3 to 14 percent stones

### **Map Unit Composition**

*Swartswood and similar soils:* 85 percent

*Minor components:* 15 percent



***Description of Swartswood and similar soils***

The typical sequence, depth, and composition of the layers of the soil are as follows—

***Surface layer:***

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 2 inches; loam

***Subsurface layer:***

E—2 to 3 inches; fine sandy loam

***Subsoil layer:***

Bhs—3 to 4 inches; gravelly fine sandy loam

Bw—4 to 21 inches; gravelly fine sandy loam

Bx1—21 to 32 inches; gravelly sandy loam

Bx2—32 to 60 inches; gravelly sandy loam

**Properties and Qualities**

*Drainage class:* well drained

*Parent material:* coarse-loamy till derived from conglomerate and/or gray and red sandstone

*Permeability:* slow to moderately rapid

*Available water capacity:* very low

*Reaction:* extremely acid to strongly acid

*Depth to restrictive feature:* 20 to 36 inches to fragipan

*Depth to high water table:* 20 to 36 inches

**Interpretative Groups**

*Land capability classification (non-irrigated):* 7s

*Hydrologic group:* C

***Minor Components***

- Shallow, somewhat excessively drained Arnot soils
- Moderately deep, well drained Lordstown soils

**UccAs—Udifluvents, 0 to 3 percent slopes, occasionally flooded*****Map Unit Setting***

*Slope:* nearly level

*Landscape:* river valleys

*Landform:* flood plains

***Map Unit Composition***

*Udifluvents and similar soils:* 90 percent

*Minor components:* 10 percent

***Description of Udifluvents and similar soils***

The typical sequence, depth, and composition of the layers of the soil are as follows—

***Surface layer:***

A—0 to 3 inches; loamy sand

***Substratum:***

C1—3 to 16 inches; loamy sand

C2—16 to 22 inches; sandy loam  
 C3—22 to 27 inches; sandy loam  
 C4—27 to 32 inches; sandy loam  
 C5—32 to 50 inches; stratified loamy sand to sandy loam

#### **Properties and Qualities**

*Drainage class:* moderately well drained  
*Parent material:* recent alluvium  
*Permeability:* moderately rapid or rapid  
*Available water capacity:* very low  
*Reaction:* very strongly acid to moderately acid  
*Depth to high water table:* 18 to 60 inches  
*Flooding:* occasional

#### **Interpretative Groups**

*Land classification (non-irrigated):* 2w  
*Hydrologic group:* A

#### **Minor Components**

- Very deep, somewhat poorly drained Fluvaquents

### **UdaB—Udorthents, 0 to 8 percent slopes, smoothed**

#### **Map Unit Composition**

*Udorthents:* 100 percent

#### **Description of Udorthents and similar soils**

The typical sequence, depth, and composition of the layers of the soil are as follows—

##### *Surface layer:*

A—0 to 12 inches; loam

##### *Substratum:*

C—12 to 72 inches; loamy sand

#### **Properties and Qualities**

*Drainage class:* well drained  
*Parent material:* fill and/or disturbed original soil material  
*Permeability:* slow to very rapid  
*Available water capacity:* moderate  
*Reaction:* very strongly acid to moderately acid  
*Depth to high water table:* greater than 6 feet

#### **Interpretative Groups**

*Land capability classification (non-irrigated):* 2e  
*Hydrologic group:* D

### **UdauB—Udorthents-Urban land complex, 0 to 8 percent slopes**

#### **Map Unit Composition**

*Udorthents and similar soils:* 60 percent  
*Urban land and similar soils:* 40 percent

***Description of Udorthents and similar soils***

The typical sequence, depth, and composition of the layers of the soil are as follows—

*Surface layer:*

A—0 to 12 inches; loam

*Substratum:*

C—12 to 72 inches; loamy sand

**Properties and Qualities**

*Drainage class:* well drained

*Parent material:* fill and/or disturbed original soil material

*Permeability:* slow to very rapid

*Available water capacity:* moderate

*Reaction:* very strongly acid to moderately acid

*Depth to high water table:* greater than 6 feet

**Interpretative Groups**

*Land capability classification (non-irrigated):* 7s

*Hydrologic group:* D

***Description of Urban land and similar soils***

Urban land consists of areas where much of the soil surface is covered with asphalt, concrete, buildings, or other impervious cover. A description of this component is not provided.

**Interpretative Groups**

*Land capability classification (non-irrigated):* 8s

*Hydrologic group:* D

**UnfA—Unadilla silt loam, 0 to 3 percent slopes*****Map Unit Setting***

*Slope:* nearly level

*Landscape:* river valleys

*Landform:* inner terraces

***Map Unit Composition***

*Unadilla and similar soils:* 80 percent

*Minor components:* 20 percent

***Description of Unadilla and similar soils***

The typical sequence, depth, and composition of the layers of the soil are as follows—

*Surface layer:*

Ap1—0 to 8 inches; silt loam

Ap2—8 to 14 inches; silt loam

*Subsoil layer:*

Bw—14 to 25 inches; silt loam

BC—25 to 39 inches; silt loam

*Substratum:*

C—39 to 60 inches; very fine sandy loam

**Properties and Qualities***Drainage class:* well drained*Parent material:* post glacial coarse-silty alluvium*Permeability:* moderate to rapid*Available water capacity:* high*Reaction:* very strongly acid to neutral*Depth to high water table:* greater than 6 feet**Interpretative Groups***Land capability classification (non-irrigated):* 1*Hydrologic group:* B**Minor Components**

- Very deep, well drained Delaware soils
- Very deep, somewhat excessively drained Colonie soils

**UnfB—Unadilla silt loam, 3 to 8 percent slopes****Map Unit Setting***Slope:* gently sloping*Landscape:* river valleys*Landform:* inner terraces**Map Unit Composition***Unadilla and similar soils:* 80 percent*Minor components:* 20 percent**Description of Unadilla and similar soils**

The typical sequence, depth, and composition of the layers of the soil are as follows—

*Surface layer:*

Ap1—0 to 8 inches; silt loam

Ap2—8 to 14 inches; silt loam

*Subsoil layer:*

Bw—14 to 25 inches; silt loam

BC—25 to 39 inches; silt loam

*Substratum:*

C—39 to 60 inches; very fine sandy loam

**Properties and Qualities***Drainage class:* well drained*Parent material:* post glacial coarse-silty alluvium*Permeability:* moderate to rapid*Available water capacity:* high*Reaction:* very strongly acid to neutral*Depth to high water table:* greater than 6 feet**Interpretative Groups***Land capability classification (non-irrigated):* 2e*Hydrologic group:* B**Minor Components**

- Very deep, well drained Delaware soils
- Very deep, somewhat excessively drained Colonie soils

## **USCHRB—Urban land-Chatfield-Rock outcrop complex, 0 to 8 percent slopes**

### ***Map Unit Setting***

*Landscape:* mountains

*Landform:* ground moraines

### ***Map Unit Composition***

*Urban land, Chatfield substratum, and similar soils:* 40 percent

*Chatfield and similar soils:* 25 percent

*Rock outcrop and similar soils:* 20 percent

*Minor components:* 15 percent

### ***Description of Urban land, Chatfield substratum, and similar soils***

The typical sequence, depth, and composition of the layers of the soil are as follows—

#### *Surface layer:*

H1—0 to 12 inches; impervious material

H2—12 to 24 inches; cobbly sandy loam

#### *Substratum:*

2C—24 to 30 inches; cobbly sandy loam

2R—30 inches; bedrock

### **Properties and Qualities**

*Drainage class:* none specified

*Parent material:* buildings, pavement, and other impervious surfaces over coarse-loamy till derived from granite and gneiss

*Permeability:* moderate or moderately rapid

*Available water capacity:* very low

*Reaction:* very strongly acid to moderately acid

*Depth to restrictive feature:* 6 to 40 inches to bedrock (lithic)

*Depth to high water table:* greater than 6 feet

### **Interpretative Groups**

*Land capability classification (non-irrigated):* 8s

*Hydrologic group:* D

### ***Description of Chatfield and similar soils***

The typical sequence, depth, and composition of the layers of the soil are as follows—

#### *Surface layer:*

Oi—0 to 1 inch; slightly decomposed plant material

Oa—1 to 3 inches; highly decomposed plant material

A3 to 5 inches; cobbly loam

#### *Subsoil layer:*

Bw1—5 to 10 inches; cobbly loam

Bw2—10 to 24 inches; cobbly sandy loam

BC—24 to 30 inches; cobbly sandy loam

#### *Substratum:*

2R—30 inches; bedrock

**Properties and Qualities***Drainage class:* well drained*Parent material:* coarse-loamy till derived from granite and gneiss*Permeability:* moderate or moderately rapid*Available water capacity:* low*Reaction:* very strongly acid to moderately acid*Depth to restrictive feature:* 20 to 40 inches to bedrock (lithic)*Depth to high water table:* greater than 6 feet**Interpretative Groups***Land capability classification (non-irrigated):* 6s*Hydrologic group:* C**Description of Rock outcrop**

Rock outcrop typically consists of bedrock exposed at the surface. A description of this component is not provided.

**Properties and Qualities***Depth to restrictive feature:* 0 inches to bedrock (lithic)**Interpretative Groups***Land capability classification (non-irrigated):* 8s*Hydrologic group:* D**Minor Components**

- Shallow, well drained Hollis soils

## **USCHRC—Urban land-Chatfield-Rock outcrop complex, 0 to 15 percent slopes**

**Map Unit Setting***Landscape:* mountains*Landform:* ground moraines**Map Unit Composition***Urban land, Chatfield substratum, and similar soils:* 40 percent*Chatfield and similar soils:* 25 percent*Rock outcrop and similar soils:* 20 percent*Minor components:* 15 percent**Description of Urban land, Chatfield substratum, and similar soils**

The typical sequence, depth, and composition of the layers of the soil are as follows—

*Surface layer:*

H1—0 to 12 inches; impervious material

H2—12 to 24 inches; cobbly sandy loam

*Substratum:*

2C—24 to 30 inches; cobbly sandy loam

2R—30 inches; bedrock

**Properties and Qualities***Drainage class:* none specified

*Parent material:* buildings, pavement, and other impervious surfaces over coarse-loamy till derived from granite and gneiss

*Permeability:* moderate or moderately rapid

*Available water capacity:* very low

*Reaction:* very strongly acid to moderately acid

*Depth to restrictive feature:* 6 to 40 inches to bedrock (lithic)

*Depth to high water table:* greater than 6 feet

#### **Interpretative Groups**

*Land capability classification (non-irrigated):* 8s

*Hydrologic group:* D

#### **Description of Chatfield and similar soils**

The typical sequence, depth, and composition of the layers of the soil are as follows—

##### *Surface layer:*

Oi—0 to 1 inch; slightly decomposed plant material

Oa—1 to 3 inches; highly decomposed plant material

A—3 to 5 inches; cobbly loam

##### *Subsoil layer:*

Bw1—5 to 10 inches; cobbly loam

Bw2—10 to 24 inches; cobbly sandy loam

BC24 to 30 inches; cobbly sandy loam

##### *Substratum:*

2R—30 inches; bedrock

#### **Properties and Qualities**

*Drainage class:* well drained

*Parent material:* coarse-loamy till derived from granite and gneiss

*Permeability:* moderate or moderately rapid

*Available water capacity:* low

*Reaction:* very strongly acid to moderately acid

*Depth to restrictive feature:* 20 to 40 inches to bedrock (lithic)

*Depth to high water table:* greater than 6 feet

#### **Interpretative Groups**

*Land capability classification (non-irrigated):* 6s

*Hydrologic group:* C

#### **Description of Rock outcrop**

Rock outcrop typically consists of bedrock exposed at the surface. A description of this component is not provided.

#### **Properties and Qualities**

*Depth to restrictive feature:* 0 inches to bedrock (lithic)

#### **Interpretative Groups**

*Land capability classification (non-irrigated):* 8s

*Hydrologic group:* D

#### **Minor Components**

- Shallow, well drained Hollis soils

## **USCHRD—Urban land-Chatfield-Rock outcrop complex, 0 to 35 percent slopes**

### ***Map Unit Setting***

*Landscape:* mountains

*Landform:* ground moraines

### ***Map Unit Composition***

*Urban land and similar soils:* 40 percent

*Chatfield and similar soils:* 25 percent

*Rock outcrop and similar soils:* 20 percent

*Minor components:* 15 percent

### ***Description of Urban land and similar soils***

The typical sequence, depth, and composition of the layers of the soil are as follows—

#### *Surface layer:*

H1—0 to 12 inches; impervious material

H2—12 to 24 inches; cobbly sandy loam

#### *Substratum:*

2C—24 to 30 inches; cobbly sandy loam

2R—30 inches; bedrock

### **Properties and Qualities**

*Drainage class:* none specified

*Parent material:* buildings, pavement, and other impervious surfaces over coarse-loamy till derived from granite and gneiss

*Permeability:* moderate or moderately rapid

*Available water capacity:* very low

*Reaction:* very strongly acid to moderately acid

*Depth to restrictive feature:* 6 to 40 inches to bedrock (lithic)

*Depth to high water table:* greater than 6 feet

### **Interpretative Groups**

*Land capability classification (non-irrigated):* 8s

*Hydrologic group:* D

### ***Description of Chatfield and similar soils***

The typical sequence, depth, and composition of the layers of the soil are as follows—

#### *Surface layer:*

Oi—0 to 1 inch; slightly decomposed plant material

Oa—1 to 3 inches; highly decomposed plant material

A—3 to 5 inches; cobbly loam

#### *Subsoil layer:*

Bw1—5 to 10 inches; cobbly loam

Bw2—10 to 24 inches; cobbly sandy loam

BC24 to 30 inches; cobbly sandy loam

#### *Substratum:*

2R—30 inches; bedrock



**Properties and Qualities***Drainage class:* well drained*Parent material:* coarse-loamy till derived from granite and gneiss*Permeability:* moderate or moderately rapid*Available water capacity:* low*Reaction:* very strongly acid to moderately acid*Depth to restrictive feature:* 20 to 40 inches to bedrock (lithic)*Depth to high water table:* greater than 6 feet**Interpretative Groups***Land capability classification (non-irrigated):* 7s*Hydrologic group:* C**Description of Rock outcrop**

Rock outcrop typically consists of bedrock exposed at the surface. A description of this component is not provided.

**Properties and Qualities***Depth to restrictive feature:* 0 inches to bedrock (lithic)**Interpretative Groups***Land capability classification (non-irrigated):* 8s*Hydrologic group:* D**Minor Components**

- Shallow, well drained Hollis soils

## **USFARC—Urban land-Farmington-Rock outcrop complex, 0 to 15 percent slopes**

**Map Unit Setting***Landscape:* till plains*Landform:* ground moraines**Map Unit Composition***Urban land, Farmington substratum, and similar soils:* 50 percent*Farmington and similar soils:* 30 percent*Rock outcrop and similar soils:* 20 percent**Description of Urban land, Farmington substratum, and similar soils**

The typical sequence, depth, and composition of the layers of the soil are as follows—

*Surface layer:*

H1—0 to 12 inches; impervious material

H2—12 to 15 inches; silt loam

*Substratum:*

2R—15 inches; bedrock

**Properties and Qualities***Drainage class:* none specified

*Parent material:* buildings, pavement, and other impervious surfaces over loamy till  
derived from limestone and dolomite

*Permeability:* moderate or moderately rapid

*Available water capacity:* very low

*Reaction:* strongly acid to slightly alkaline

*Depth to restrictive feature:* 6 to 20 inches to bedrock (lithic)

*Depth to high water table:* greater than 6 feet

#### **Interpretative Groups**

*Land capability classification (non-irrigated):* 8s

*Hydrologic group:* D

#### ***Description of Farmington and similar soils***

The typical sequence, depth, and composition of the layers of the soil are as follows—

*Surface layer:*

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 3 inches; silt loam

*Subsoil layer:*

Bw1—3 to 9 inches; silt loam

Bw2—9 to 15 inches; silt loam

*Substratum:*

2R—15 inches; bedrock

#### **Properties and Qualities**

*Drainage class:* well drained

*Parent material:* loamy till derived from limestone and dolomite

*Permeability:* moderate or moderately rapid

*Available water capacity:* very low

*Reaction:* strongly acid to slightly alkaline

*Depth to restrictive feature:* 10 to 20 inches to bedrock (lithic)

*Depth to high water table:* greater than 6 feet

#### **Interpretative Groups**

*Land capability classification (non-irrigated):* 6s

*Hydrologic group:* D

#### ***Description of Rock outcrop***

Rock outcrop typically consists of bedrock exposed at the surface. A description of this component is not provided.

#### **Properties and Qualities**

*Depth to restrictive feature:* 0 inches to bedrock (lithic)

#### **Interpretative Groups**

*Land capability classification (non-irrigated):* 8s

*Hydrologic group:* D

### **USFARD—Urban land-Farmington-Rock outcrop complex, 0 to 35 percent slopes**

#### ***Map Unit Setting***

*Landscape:* till plains

*Landform:* ground moraines

### **Map Unit Composition**

*Urban land, Farmington substratum, and similar soils:* 40 percent

*Farmington and similar soils:* 35 percent

*Rock outcrop and similar soils:* 25 percent

#### **Description of Urban land, Farmington substratum, and similar soils**

The typical sequence, depth, and composition of the layers of the soil are as follows—

##### *Surface layer:*

H1—0 to 12 inches; impervious material

H2—12 to 15 inches; silt loam

##### *Substratum:*

2R—15 inches; bedrock

#### **Properties and Qualities**

*Drainage class:* none specified

*Parent material:* buildings, pavement, and other impervious surfaces over loamy till derived from limestone and dolomite

*Permeability:* moderate or moderately rapid

*Available water capacity:* very low

*Reaction:* strongly acid to slightly alkaline

*Depth to restrictive feature:* 6 to 20 inches to bedrock (lithic)

*Depth to high water table:* greater than 6 feet

#### **Interpretative Groups**

*Land capability classification (non-irrigated):* 8s

*Hydrologic group:* D

#### **Description of Farmington and similar soils**

The typical sequence, depth, and composition of the layers of the soil are as follows—

##### *Surface layer:*

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 3 inches; silt loam

##### *Subsoil layer:*

Bw1—3 to 9 inches; silt loam

Bw2—9 to 15 inches; silt loam

##### *Substratum:*

2R—15 inches; bedrock

#### **Properties and Qualities**

*Drainage class:* well drained

*Parent material:* loamy till derived from limestone and dolomite

*Permeability:* moderate or moderately rapid

*Available water capacity:* very low

*Reaction:* strongly acid to slightly alkaline

*Depth to restrictive feature:* 10 to 20 inches to bedrock (lithic)

*Depth to high water table:* greater than 6 feet

#### **Interpretative Groups**

*Land capability classification (non-irrigated):* 7s

*Hydrologic group:* D

### ***Description of Rock outcrop***

Rock outcrop typically consists of bedrock exposed at the surface. A description of this component is not provided.

#### **Properties and Qualities**

*Depth to restrictive feature:* 0 inches to bedrock (lithic)

#### **Interpretative Groups**

*Land capability classification (non-irrigated):* 8s

*Hydrologic group:* D

## **USFAWB—Urban land-Farmington-Wassaic complex, 0 to 8 percent slopes**

### ***Map Unit Setting***

*Landscape:* till plains

*Landform:* ground moraines

### ***Map Unit Composition***

*Urban land, Farmington substratum, and similar soils:* 50 percent

*Farmington and similar soils:* 30 percent

*Wassaic and similar soils:* 20 percent

### ***Description of Urban land, Farmington substratum, and similar soils***

The typical sequence, depth, and composition of the layers of the soil are as follows—

#### *Surface layer:*

H1—0 to 12 inches; impervious material

H2—12 to 15 inches; silt loam

#### *Substratum:*

2R—15 inches; bedrock

#### **Properties and Qualities**

*Drainage class:* none specified

*Parent material:* buildings, pavement, and other impervious surfaces over loamy till derived from limestone and dolomite

*Permeability:* moderate or moderately rapid

*Available water capacity:* very low

*Reaction:* strongly acid to slightly alkaline

*Depth to restrictive feature:* 6 to 20 inches to bedrock (lithic)

*Depth to high water table:* greater than 6 feet

#### **Interpretative Groups**

*Land capability classification (non-irrigated):* 8s

*Hydrologic group:* D

### ***Description of Farmington and similar soils***

The typical sequence, depth, and composition of the layers of the soil are as follows—

#### *Surface layer:*

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 3 inches; silt loam

*Subsoil layer:*

Bw1—3 to 9 inches; silt loam

Bw2—9 to 15 inches; silt loam

*Substratum:*

2R—15 inches; bedrock

**Properties and Qualities***Drainage class:* well drained*Parent material:* loamy till derived from limestone and dolomite*Permeability:* moderate or moderately rapid*Available water capacity:* very low*Reaction:* strongly acid to slightly alkaline*Depth to restrictive feature:* 10 to 20 inches to bedrock (lithic)*Depth to high water table:* greater than 6 feet**Interpretative Groups***Land capability classification (non-irrigated):* 3s*Hydrologic group:* D***Description of Wassaic and similar soils***

The typical sequence, depth, and composition of the layers of the soil are as follows—

*Surface layer:*

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 5 inches; loam

E/A—5 to 9 inches; loam

Bt/E—9 to 17 inches; silty clay loam

*Subsoil layer:*

Bt—17 to 28 inches; silty clay loam

*Substratum:*

2R—28 inches; bedrock

**Properties and Qualities***Drainage class:* well drained*Parent material:* fine-loamy till derived from limestone and dolomite*Permeability:* moderate*Available water capacity:* low*Reaction:* moderately acid to neutral*Depth to restrictive feature:* 20 to 40 inches to bedrock (lithic)*Depth to high water table:* greater than 6 feet**Interpretative Groups***Land capability classification (non-irrigated):* 2e*Hydrologic group:* C

## **USHAZA—Urban land-Hazen-Hoosic complex, 0 to 3 percent slopes**

***Map Unit Setting****Landscape:* outwash plains*Landform:* valley trains

### **Map Unit Composition**

*Urban land, Hazen substratum, and similar soils:* 45 percent

*Hazen and similar soils:* 35 percent

*Hoosic and similar soils:* 20 percent

### **Description of Urban land, Hazen substratum, and similar soils**

The typical sequence, depth, and composition of the layers of the soil are as follows—

#### *Surface layer:*

H1—0 to 12 inches; impervious material

H2—12 to 18 inches; sandy loam

#### *Substratum:*

2C1—18 to 29 inches; very stony loamy coarse sand

2C2—29 to 41 inches; very gravelly coarse sand

2C3—41 to 60 inches; extremely gravelly coarse sand

### **Properties and Qualities**

*Drainage class:* none specified

*Parent material:* buildings, pavement, and other impervious surfaces over glaciofluvial deposits

*Permeability:* moderate to rapid

*Available water capacity:* very low

*Reaction:* moderately acid to slightly alkaline

*Depth to restrictive feature:* 6 to 48 inches to strongly contrasting textural stratification

*Depth to high water table:* greater than 6 feet

### **Interpretative Groups**

*Land capability classification (non-irrigated):* 8s

*Hydrologic group:* D

### **Description of Hazen and similar soils**

The typical sequence, depth, and composition of the layers of the soil are as follows—

#### *Surface layer:*

Oi—0 to 1 inch; slightly decomposed plant material

Ap—1 to 10 inches; loam

#### *Subsoil layer:*

Bt—10 to 18 inches; sandy loam

#### *Substratum:*

2C1—18 to 29 inches; very stony loamy coarse sand

2C2—29 to 41 inches; very gravelly coarse sand

2C3—41 to 60 inches; extremely gravelly coarse sand

### **Properties and Qualities**

*Drainage class:* well drained

*Parent material:* glaciofluvial deposits derived from sandstone and shale and/or limestone and dolomite and/or conglomerate

*Permeability:* moderate to rapid

*Available water capacity:* low

*Reaction:* moderately acid to slightly alkaline

*Depth to restrictive feature:* 18 to 40 inches to strongly contrasting textural stratification

*Depth to high water table:* greater than 6 feet

**Interpretative Groups***Land capability classification (non-irrigated): 1**Hydrologic group: B****Description of Hoosic and similar soils***

The typical sequence, depth, and composition of the layers of the soil are as follows—

*Surface layer:**Oi—0 to 1 inch; slightly decomposed plant material**Ap—1 to 9 inches; gravelly loam**Subsoil layer:**Bw—9 to 21 inches; very gravelly coarse sandy loam**Substratum:**2C1—21 to 27 inches; extremely gravelly loamy coarse sand**2C2—27 to 37 inches; extremely gravelly coarse sand**2C3—37 to 49 inches; extremely gravelly coarse sand**2C4—49 to 60 inches; extremely gravelly coarse sand***Properties and Qualities***Drainage class: somewhat excessively drained**Parent material: glaciofluvial deposits derived from sandstone and shale and/or conglomerate**Permeability: moderately rapid to very rapid**Available water capacity: low**Reaction: very strongly acid to moderately acid**Depth to high water table: greater than 6 feet***Interpretative Groups***Land capability classification (non-irrigated): 2e**Hydrologic group: B***USHAZB—Urban land-Hazen-Hoosic complex, 0 to 8 percent slopes*****Map Unit Setting****Landscape: outwash plains**Landform: valley trains****Map Unit Composition****Urban land, Hazen substratum, and similar soils: 55 percent**Hazen and similar soils: 25 percent**Hoosic and similar soils: 20 percent****Description of Urban land, Hazen substratum, and similar soils***

The typical sequence, depth, and composition of the layers of the soil are as follows—

*Surface layer:**H1—0 to 12 inches; impervious material**H2—12 to 18 inches; sandy loam**Substratum:**2C1—18 to 29 inches; very stony loamy coarse sand*

2C2—29 to 41 inches; very gravelly coarse sand

2C3—41 to 60 inches; extremely gravelly coarse sand

#### **Properties and Qualities**

*Drainage class:* none specified

*Parent material:* buildings, pavement, and other impervious surfaces over glaciofluvial deposits

*Permeability:* moderate to rapid

*Available water capacity:* very low

*Reaction:* moderately acid to slightly alkaline

*Depth to restrictive feature:* 6 to 48 inches to strongly contrasting textural stratification

*Depth to high water table:* greater than 6 feet

#### **Interpretative Groups**

*Land capability classification (non-irrigated):* 8s

*Hydrologic group:* D

#### ***Description of Hazen and similar soils***

The typical sequence, depth, and composition of the layers of the soil are as follows—

*Surface layer:*

Oi—0 to 1 inch; slightly decomposed plant material

Ap—1 to 10 inches; loam

*Subsoil layer:*

Bt—10 to 18 inches; sandy loam

*Substratum:*

2C1—18 to 29 inches; very stony loamy coarse sand

2C2—29 to 41 inches; very gravelly coarse sand

2C3—41 to 60 inches; extremely gravelly coarse sand

#### **Properties and Qualities**

*Drainage class:* well drained

*Parent material:* glaciofluvial deposits derived from sandstone and shale and/or limestone and dolomite and/or conglomerate

*Permeability:* moderate to rapid

*Available water capacity:* low

*Reaction:* moderately acid to slightly alkaline

*Depth to restrictive feature:* 18 to 40 inches to strongly contrasting textural stratification

*Depth to high water table:* greater than 6 feet

#### **Interpretative Groups**

*Land capability classification (non-irrigated):* 2e

*Hydrologic group:* B

#### ***Description of Hoosic and similar soils***

The typical sequence, depth, and composition of the layers of the soil are as follows—

*Surface layer:*

Oi—0 to 1 inch; slightly decomposed plant material

Ap—1 to 9 inches; gravelly loam



*Subsoil layer:*

Bw—9 to 21 inches; very gravelly coarse sandy loam

*Substratum:*

2C1—21 to 27 inches; extremely gravelly loamy coarse sand

2C2—27 to 37 inches; extremely gravelly coarse sand

2C3—37 to 49 inches; extremely gravelly coarse sand

2C4—49 to 60 inches; extremely gravelly coarse sand

**Properties and Qualities**

*Drainage class:* somewhat excessively drained

*Parent material:* glaciofluvial deposits derived from sandstone and shale and/or conglomerate

*Permeability:* moderately rapid to very rapid

*Available water capacity:* low

*Reaction:* very strongly acid to moderately acid

*Depth to high water table:* greater than 6 feet

**Interpretative Groups**

*Land capability classification (non-irrigated):* 2s

*Hydrologic group:* B

## **USNAMB—Urban land-Nassau-Manlius complex, 0 to 8 percent slopes**

### ***Map Unit Setting***

*Landscape:* till plains

*Landform:* ground moraines

### ***Map Unit Composition***

*Urban land, Nassau substratum, and similar soils:* 45 percent

*Nassau and similar soils:* 30 percent

*Manlius and similar soils:* 25 percent

### ***Description of Urban land, Nassau substratum, and similar soils***

The typical sequence, depth, and composition of the layers of the soil are as follows—

*Surface layer:*

H1—0 to 12 inches; impervious material

H2—12 to 13 inches; extremely channery silt loam

*Substratum:*

2R—13 inches; bedrock

**Properties and Qualities**

*Drainage class:* none specified

*Parent material:* buildings, pavement, and other impervious surfaces over loamy till derived from acid shale

*Permeability:* moderate or moderately rapid

*Available water capacity:* very low

*Reaction:* very strongly acid to slightly acid

*Depth to restrictive feature:* 6 to 20 inches to bedrock (lithic)

*Depth to high water table:* greater than 6 feet

**Interpretative Groups**

*Land capability classification (non-irrigated): 8s*

*Hydrologic group: D*

***Description of Nassau and similar soils***

The typical sequence, depth, and composition of the layers of the soil are as follows—

*Surface layer:*

Ap—0 to 7 inches; very channery silt loam

*Subsoil layer:*

Bw—7 to 13 inches; extremely channery silt loam

*Substratum:*

2R—13 inches; bedrock

**Properties and Qualities**

*Drainage class:* somewhat excessively drained

*Parent material:* loamy till derived from acid shale

*Permeability:* moderate or moderately rapid

*Available water capacity:* very low

*Reaction:* very strongly acid to neutral

*Depth to restrictive feature:* 10 to 20 inches to bedrock (lithic)

*Depth to high water table:* greater than 6 feet

**Interpretative Groups**

*Land capability classification (non-irrigated): 3s*

*Hydrologic group: D*

***Description of Manlius and similar soils***

The typical sequence, depth, and composition of the layers of the soil are as follows—

*Surface layer:*

Ap—0 to 9 inches; very channery silt loam

*Subsoil layer:*

Bw—9 to 20 inches; extremely channery silt loam

*Substratum:*

CB—20 to 29 inches; extremely channery silt loam

2R—29 inches; bedrock

**Properties and Qualities**

*Drainage class:* well drained

*Parent material:* loamy till derived from acid shale

*Permeability:* moderate or moderately rapid

*Available water capacity:* very low

*Reaction:* extremely acid to neutral

*Depth to restrictive feature:* 20 to 40 inches to bedrock (lithic)

*Depth to high water table:* greater than 6 feet

**Interpretative Groups**

*Land capability classification (non-irrigated): 2s*

*Hydrologic group: C*

## **USNAMC—Urban land-Nassau-Manlius complex, 0 to 15 percent slopes**

### ***Map Unit Setting***

*Landscape:* till plains

*Landform:* ground moraines

### ***Map Unit Composition***

*Urban land, Nassau substratum, and similar soils:* 55 percent

*Nassau and similar soils:* 25 percent

*Manlius and similar soils:* 20 percent

### ***Description of Urban land, Nassau substratum, and similar soils***

The typical sequence, depth, and composition of the layers of the soil are as follows—

*Surface layer:*

H1—0 to 12 inches; impervious material

H2—12 to 13 inches; extremely channery silt loam

*Substratum:*

2R—13 inches; bedrock

### **Properties and Qualities**

*Drainage class:* none specified

*Parent material:* buildings, pavement, and other impervious surfaces over loamy till derived from acid shale

*Permeability:* moderate or moderately rapid

*Available water capacity:* very low

*Reaction:* very strongly acid to slightly acid

*Depth to restrictive feature:* 6 to 20 inches to bedrock (lithic)

*Depth to high water table:* greater than 6 feet

### **Interpretative Groups**

*Land capability classification (non-irrigated):* 8s

*Hydrologic group:* D

### ***Description of Nassau and similar soils***

The typical sequence, depth, and composition of the layers of the soil are as follows—

*Surface layer:*

Ap—0 to 7 inches; very channery silt loam

*Subsoil layer:*

Bw—7 to 13 inches; extremely channery silt loam

*Substratum:*

2R—13 inches; bedrock

### **Properties and Qualities**

*Drainage class:* somewhat excessively drained

*Parent material:* loamy till derived from acid shale

*Permeability:* moderate or moderately rapid

*Available water capacity:* very low

*Reaction:* very strongly acid to neutral

*Depth to restrictive feature:* 10 to 20 inches to bedrock (lithic)

*Depth to high water table:* greater than 6 feet

### **Interpretative Groups**

*Land capability classification (non-irrigated):* 4e

*Hydrologic group:* D

### ***Description of Manlius and similar soils***

The typical sequence, depth, and composition of the layers of the soil are as follows—

*Surface layer:*

Ap—0 to 9 inches; very channery silt loam

*Subsoil layer:*

Bw—9 to 20 inches; extremely channery silt loam

*Substratum:*

CB—20 to 29 inches; extremely channery silt loam

2R—29 inches; bedrock

### **Properties and Qualities**

*Drainage class:* well drained

*Parent material:* loamy till derived from acid shale

*Permeability:* moderate or moderately rapid

*Available water capacity:* very low

*Reaction:* extremely acid to neutral

*Depth to restrictive feature:* 20 to 40 inches to bedrock (lithic)

*Depth to high water table:* greater than 6 feet

### **Interpretative Groups**

*Land capability classification (non-irrigated):* 3e

*Hydrologic group:* C

## **USNAMD—Urban land-Nassau-Manlius complex, 0 to 25 percent slopes**

### ***Map Unit Setting***

*Landscape:* till plains

*Landform:* ground moraines

### ***Map Unit Composition***

*Urban land, Nassau substratum, and similar soils:* 60 percent

*Nassau and similar soils:* 25 percent

*Manlius and similar soils:* 15 percent

### ***Description of Urban land, Nassau substratum, and similar soils***

The typical sequence, depth, and composition of the layers of the soil are as follows—

*Surface layer:*

H1—0 to 12 inches; impervious material

H2—12 to 13 inches; extremely channery silt loam

*Substratum:*

2R—13 inches; bedrock

**Properties and Qualities**

*Drainage class:* none specified

*Parent material:* buildings, pavement, and other impervious surfaces over loamy till derived from acid shale

*Permeability:* moderate or moderately rapid

*Available water capacity:* very low

*Reaction:* very strongly acid to slightly acid

*Depth to restrictive feature:* 6 to 20 inches to bedrock (lithic)

*Depth to high water table:* greater than 6 feet

**Interpretative Groups**

*Land capability classification (non-irrigated):* 8s

*Hydrologic group:* D

***Description of Nassau and similar soils***

The typical sequence, depth, and composition of the layers of the soil are as follows—

*Surface layer:*

Ap—0 to 7 inches; very channery silt loam

*Subsoil layer:*

Bw—7 to 13 inches; extremely channery silt loam

*Substratum:*

2R—13 inches; bedrock

**Properties and Qualities**

*Drainage class:* somewhat excessively drained

*Parent material:* loamy till derived from acid shale

*Permeability:* moderate or moderately rapid

*Available water capacity:* very low

*Reaction:* very strongly acid to neutral

*Depth to restrictive feature:* 10 to 20 inches to bedrock (lithic)

*Depth to high water table:* greater than 6 feet

**Interpretative Groups**

*Land capability classification (non-irrigated):* 6e

*Hydrologic group:* D

***Description of Manlius and similar soils***

The typical sequence, depth, and composition of the layers of the soil are as follows—

*Surface layer:*

Ap—0 to 9 inches; very channery silt loam

*Subsoil layer:*

Bw—9 to 20 inches; extremely channery silt loam

*Substratum:*

CB—20 to 29 inches; extremely channery silt loam

2R—29 inches; bedrock

**Properties and Qualities**

*Drainage class:* well drained

*Parent material:* loamy till derived from acid shale

*Permeability:* moderate or moderately rapid

*Available water capacity:* very low

*Reaction:* extremely acid to neutral

*Depth to restrictive feature:* 20 to 40 inches to bedrock (lithic)

*Depth to high water table:* greater than 6 feet

#### **Interpretative Groups**

*Land capability classification (non-irrigated):* 4e

*Hydrologic group:* C

## **USWUSB—Urban land-Wurtsboro-Swartswood complex, 0 to 8 percent slopes**

### ***Map Unit Setting***

*Landscape:* till plains

*Landform:* ground moraines

### ***Map Unit Composition***

*Urban land, Wurtsboro substratum, and similar soils:* 45 percent

*Wurtsboro and similar soils:* 35 percent

*Swartswood and similar soils:* 20 percent

### ***Description of Urban land, Wurtsboro substratum, and similar soils***

The typical sequence, depth, and composition of the layers of the soil are as follows—

#### *Surface layer:*

H1—0 to 12 inches; impervious material

H2—12 to 18 inches; sandy loam

#### *Substratum:*

2C1—18 to 24 inches; gravelly sandy loam

2C2—24 to 30 inches; gravelly sandy loam

2C3—30 to 60 inches; gravelly sandy loam

### **Properties and Qualities**

*Drainage class:* none specified

*Parent material:* buildings, pavement, and other impervious surfaces over bouldery quartzose coarse-loamy drift derived from conglomerate

*Permeability:* slow to moderately rapid

*Available water capacity:* low

*Reaction:* extremely acid or strongly acid

*Depth to restrictive feature:* 6 to 48 inches to fragipan

*Depth to high water table:* 7 to 40 inches

#### **Interpretative Groups**

*Land capability classification (non-irrigated):* 8s

*Hydrologic group:* D

### ***Description of Wurtsboro and similar soils***

The typical sequence, depth, and composition of the layers of the soil are as follows—

#### *Surface layer:*

Oi—0 to 2 inches; slightly decomposed plant material

A—2 to 3 inches; fine sandy loam

#### *Subsurface layer:*

E—3 to 5 inches; fine sandy loam

*Subsoil layer:*

Bhs—5 to 6 inches; fine sandy loam

Bw1—6 to 18 inches; sandy loam

Bw2—18 to 24 inches; gravelly sandy loam

Bx1—24 to 30 inches; gravelly sandy loam

Bx2—30 to 60 inches; gravelly sandy loam

**Properties and Qualities**

*Drainage class:* moderately well drained

*Parent material:* bouldery quartzose coarse-loamy drift derived from conglomerate

*Permeability:* slow to moderately rapid

*Available water capacity:* low

*Reaction:* extremely acid to strongly acid

*Depth to restrictive feature:* 17 to 28 inches to fragipan

*Depth to high water table:* 7 to 40 inches

**Interpretative Groups**

*Land capability classification (non-irrigated):* 2w

*Hydrologic group:* C

***Description of Swartswood and similar soils***

The typical sequence, depth, and composition of the layers of the soil are as follows—

*Surface layer:*

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 2 inches; loam

*Subsurface layer:*

E—2 to 3 inches; fine sandy loam

*Subsoil layer:*

Bhs—3 to 4 inches; gravelly fine sandy loam

Bw—4 to 21 inches; gravelly fine sandy loam

Bx1—21 to 32 inches; gravelly sandy loam

Bx2—32 to 60 inches; gravelly sandy loam

**Properties and Qualities**

*Drainage class:* well drained

*Parent material:* bouldery quartzose coarse-loamy drift derived from conglomerate

*Permeability:* slow to moderately rapid

*Available water capacity:* very low

*Reaction:* extremely acid to strongly acid

*Depth to restrictive feature:* 20 to 36 inches to fragipan

*Depth to high water table:* 20 to 36 inches

**Interpretative Groups**

*Land capability classification (non-irrigated):* 2e

*Hydrologic group:* C

**VepBc—Venango silt loam, 0 to 8 percent slopes,  
extremely stony*****Map Unit Setting***

*Slope:* nearly level to gently sloping

*Landscape:* drumlin fields

*Landform:* drumlins

*Surface cover:* 3 to 14 percent stones

### **Map Unit Composition**

*Venango and similar soils:* 90 percent

*Minor components:* 10 percent

### **Description of Venango and similar soils**

The typical sequence, depth, and composition of the layers of the soil are as follows—

*Surface layer:*

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 6 inches; silt loam

*Subsoil layer:*

Bw—6 to 16 inches; silt loam

Btx1—16 to 22 inches; gravelly silty clay loam

Btx2—22 to 34 inches; gravelly silty clay loam

Btx3—34 to 60 inches; gravelly silty clay loam

### **Properties and Qualities**

*Drainage class:* somewhat poorly drained

*Parent material:* fine-loamy till derived from limestone, sandstone, and shale

*Permeability:* very slow to moderate

*Available water capacity:* low

*Reaction:* extremely acid to neutral

*Depth to restrictive feature:* 14 to 28 inches to fragipan

*Depth to high water table:* 6 to 18 inches

### **Interpretative Groups**

*Land capability classification (non-irrigated):* 7s

*Hydrologic group:* D

### **Minor Components**

- Deep, very poorly drained Chippewa soils

## **VepCc—Venango silt loam, 8 to 15 percent slopes, extremely stony**

### **Map Unit Setting**

*Slope:* strongly sloping

*Landscape:* drumlin fields

*Landform:* drumlins

*Surface cover:* 3 to 14 percent stones

### **Map Unit Composition**

*Venango and similar soils:* 85 percent

*Minor components:* 15 percent

### **Description of Venango and similar soils**

The typical sequence, depth, and composition of the layers of the soil are as follows—



*Surface layer:*

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 6 inches; silt loam

*Subsoil layer:*

Bw—6 to 16 inches; silt loam

Btx1—16 to 22 inches; gravelly silty clay loam

Btx2—22 to 34 inches; gravelly silty clay loam

Btx3—34 to 60 inches; gravelly silty clay loam

**Properties and Qualities**

*Drainage class:* somewhat poorly drained

*Parent material:* fine-loamy till derived from limestone, sandstone, and shale

*Permeability:* very slow to moderate

*Available water capacity:* low

*Reaction:* extremely acid to neutral

*Depth to restrictive feature:* 14 to 28 inches to fragipan

*Depth to high water table:* 6 to 18 inches

**Interpretative Groups**

*Land capability classification (non-irrigated):* 7s

*Hydrologic group:* D

***Minor Components***

- Shallow, somewhat excessively drained Nassau soils
- Moderately deep, well drained Manlius soils

**WaahAt—Wallkill silt loam, 0 to 3 percent slopes,  
frequently flooded*****Map Unit Setting***

*Slope:* nearly level

*Landscape:* river valleys

*Landform:* flood plains

***Map Unit Composition***

*Wallkill and similar soils:* 90 percent

*Minor components:* 10 percent

***Description of Wallkill and similar soils***

The typical sequence, depth, and composition of the layers of the soil are as follows—

*Surface layer:*

A—0 to 6 inches; silt loam

*Subsoil layer:*

Bg1—6 to 14 inches; silt loam

Bg2—14 to 22 inches; silty clay loam

*Substratum:*

Ab—22 to 27 inches; mucky silty clay loam

2Oa1—27 to 55 inches; muck

2Oa2—55 to 60 inches; muck

**Properties and Qualities***Drainage class:* very poorly drained*Parent material:* fine-loamy alluvium over organic material*Permeability:* moderate in the mineral portion, moderately rapid or rapid in the organic portion*Available water capacity:* very high*Reaction:* very strongly acid to moderately alkaline*Depth to high water table:* 0 inches*Flooding:* frequent**Interpretative Groups***Land capability classification (non-irrigated):* 5w*Hydrologic group:* D**Minor Components**

- Very deep, very poorly drained Catden soils

**WabBb—Wallpack fine sandy loam, aeolian mantle, 0 to 8 percent slopes, very stony****Map Unit Setting***Slope:* nearly level to gently sloping*Landscape:* till plains*Landform:* ridges*Surface cover:* 0.1 to 2 percent stones**Map Unit Composition***Wallpack and similar soils:* 85 percent*Minor components:* 15 percent**Description of Wallpack and similar soils**

The typical sequence, depth, and composition of the layers of the soil are as follows—

*Surface layer:*

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 2 inches; fine sandy loam

Ap—2 to 8 inches; fine sandy loam

*Subsoil layer:*

Bw1—8 to 14 inches; fine sandy loam

2Bw2—14 to 21 inches; fine sandy loam

2Bw3—21 to 26 inches; gravelly fine sandy loam

2BC1—26 to 31 inches; very gravelly fine sandy loam

2BC2—31 to 36 inches; very gravelly fine sandy loam

2BC3—36 to 60 inches; gravelly fine sandy loam

**Properties and Qualities***Drainage class:* well drained*Parent material:* aeolian deposits over coarse-loamy till derived from limestone, sandstone, and shale*Permeability:* moderate*Available water capacity:* moderate*Reaction:* extremely acid to strongly acid*Depth to high water table:* greater than 6 feet

**Interpretative Groups**

*Land capability classification (non-irrigated): 2e*

*Hydrologic group: B*

**Minor Components**

- Moderately deep, well drained Lordstown soils
- Deep, moderately well drained Aquic Dystrudepts, aeolian mantle soils

**WabCb—Wallpack fine sandy loam, aeolian mantle, 8 to 15 percent slopes, very stony****Map Unit Setting**

*Slope:* strongly sloping

*Landscape:* till plains

*Landform:* ridges

*Surface cover:* 0.1 to 2 percent stones

**Map Unit Composition**

*Wallpack and similar soils:* 85 percent

*Minor components:* 15 percent

**Description of Wallpack and similar soils**

The typical sequence, depth, and composition of the layers of the soil are as follows—

**Surface layer:**

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 2 inches; fine sandy loam

Ap—2 to 8 inches; fine sandy loam

**Subsoil layer:**

Bw1—8 to 14 inches; fine sandy loam

2Bw2—14 to 21 inches; fine sandy loam

2Bw3—21 to 26 inches; gravelly fine sandy loam

2BC1—26 to 31 inches; very gravelly fine sandy loam

2BC2—31 to 36 inches; very gravelly fine sandy loam

2BC3—36 to 60 inches; gravelly fine sandy loam

**Properties and Qualities**

*Drainage class:* well drained

*Parent material:* aeolian deposits over coarse-loamy till derived from limestone, sandstone, and shale

*Permeability:* moderate

*Available water capacity:* moderate

*Reaction:* extremely acid to strongly acid

*Depth to high water table:* greater than 6 feet

**Interpretative Groups**

*Land capability classification (non-irrigated): 3e*

*Hydrologic group: B*

**Minor Components**

- Moderately deep, well drained Lordstown soils
- Deep, moderately well drained Aquic Dystrudepts, aeolian mantle soils

## **WabDb—Wallpack fine sandy loam, aeolian mantle, 15 to 35 percent slopes, very stony**

### ***Map Unit Setting***

*Slope:* moderately steep or steep

*Landscape:* till plains

*Landform:* ridges

*Surface cover:* 0.1 to 2 percent stones

### ***Map Unit Composition***

*Wallpack and similar soils:* 85 percent

*Minor components:* 15 percent

### ***Description of Wallpack and similar soils***

The typical sequence, depth, and composition of the layers of the soil are as follows—

*Surface layer:*

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 2 inches; fine sandy loam

Ap—2 to 8 inches; fine sandy loam

*Subsoil layer:*

Bw1—8 to 14 inches; fine sandy loam

2Bw2—14 to 21 inches; fine sandy loam

2Bw3—21 to 26 inches; gravelly fine sandy loam

2BC1—26 to 31 inches; very gravelly fine sandy loam

2BC2—31 to 36 inches; very gravelly fine sandy loam

2BC3—36 to 60 inches; gravelly fine sandy loam

### **Properties and Qualities**

*Drainage class:* well drained

*Parent material:* aeolian deposits over coarse-loamy till derived from limestone, sandstone, and shale

*Permeability:* moderate

*Available water capacity:* moderate

*Reaction:* extremely acid to strongly acid

*Depth to high water table:* greater than 6 feet

### **Interpretative Groups**

*Land capability classification (non-irrigated):* 6e

*Hydrologic group:* B

### ***Minor Components***

- Moderately deep, well drained Lordstown soils
- Deep, moderately well drained Aquic Dystrudepts, aeolian mantle soils

## **WacB—Wallpack silt loam, 3 to 8 percent slopes**

### ***Map Unit Setting***

*Slope:* nearly level to gently sloping

*Landscape:* till plains

*Landform:* ridges

**Map Unit Composition**

*Wallpack and similar soils:* 85 percent

*Minor components:* 15 percent

**Description of Wallpack and similar soils**

The typical sequence, depth, and composition of the layers of the soil are as follows—

*Surface layer:*

Ap1—0 to 3 inches; silt loam

Ap2—3 to 9 inches; gravelly silt loam

*Subsoil layer:*

Bt—9 to 16 inches; gravelly silt loam

Btx1—16 to 25 inches; gravelly silt loam

Btx2—25 to 65 inches; very gravelly silt loam

**Properties and Qualities**

*Drainage class:* well drained

*Parent material:* coarse-loamy till derived from limestone, sandstone, and shale

*Permeability:* very slow to moderately rapid

*Available water capacity:* very low

*Reaction:* strongly acid to slightly alkaline

*Depth to restrictive feature:* 12 to 36 inches to fragipan

*Depth to high water table:* 23 to 45 inches

**Interpretative Groups**

*Land capability classification (non-irrigated):* 2e

*Hydrologic group:* C

**Minor Components**

- Very deep, moderately well drained Cambridge soils
- Moderately deep, well drained Lordstown soils

**WacBc—Wallpack silt loam, 3 to 8 percent slopes, extremely stony****Map Unit Setting**

*Slope:* nearly level to gently sloping

*Landscape:* till plains

*Landform:* ridges

*Surface cover:* 3 to 14 percent stones

**Map Unit Composition**

*Wallpack and similar soils:* 85 percent

*Minor components:* 15 percent

**Description of Wallpack and similar soils**

The typical sequence, depth, and composition of the layers of the soil are as follows—

*Surface layer:*

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 2 inches; gravelly silt loam

*Subsurface layer:*

AB—2 to 5 inches; gravelly silt loam

*Subsoil layer:*

Bt—5 to 18 inches; gravelly silt loam

Btx—18 to 24 inches; gravelly loam

BCtx1—24 to 42 inches; gravelly silt loam

BCtx2—42 to 60 inches; gravelly loam

**Properties and Qualities**

*Drainage class:* well drained

*Parent material:* coarse-loamy till derived from limestone, sandstone, and shale

*Permeability:* very slow to moderately rapid

*Available water capacity:* low

*Reaction:* strongly acid to slightly alkaline

*Depth to restrictive feature:* 12 to 36 inches to fragipan

*Depth to high water table:* 20 to 42 inches

**Interpretative Groups**

*Land capability classification (non-irrigated):* 7s

*Hydrologic group:* C

**Minor Components**

- Very deep, moderately well drained Cambridge soils
- Moderately deep, well drained Lordstown soils

**WacC—Wallpack silt loam, 8 to 15 percent slopes****Map Unit Setting**

*Slope:* strongly sloping

*Landscape:* till plains

*Landform:* ridges

**Map Unit Composition**

*Wallpack and similar soils:* 85 percent

*Minor components:* 15 percent

**Description of Wallpack and similar soils**

The typical sequence, depth, and composition of the layers of the soil are as follows—

*Surface layer:*

Ap1—0 to 3 inches; silt loam

Ap2—3 to 9 inches; gravelly silt loam

*Subsoil layer:*

Bt—9 to 16 inches; gravelly silt loam

Btx1—16 to 25 inches; gravelly silt loam

Btx2—25 to 65 inches; very gravelly silt loam

**Properties and Qualities**

*Drainage class:* well drained

*Parent material:* coarse-loamy till derived from limestone, sandstone, and shale

*Permeability:* very slow to moderately rapid

*Available water capacity:* very low

*Reaction:* strongly acid to slightly alkaline

*Depth to restrictive feature:* 12 to 36 inches to fragipan

*Depth to high water table:* 23 to 45 inches

**Interpretative Groups**

*Land capability classification (non-irrigated):* 3e

*Hydrologic group:* C

**Minor Components**

- Very deep, moderately well drained Cambridge soils
- Moderately deep, well drained Lordstown soils

**WacCc—Wallpack silt loam, 8 to 15 percent slopes,  
extremely stony**

**Map Unit Setting**

*Slope:* strongly sloping

*Landscape:* till plains

*Landform:* ridges

*Surface cover:* 3 to 14 percent stones

**Map Unit Composition**

*Wallpack and similar soils:* 85 percent

*Minor components:* 15 percent

**Description of Wallpack and similar soils**

*The typical sequence, depth, and composition of the layers of the soil are as follows—*

*Surface layer:*

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 2 inches; gravelly silt loam

*Subsurface layer:*

AB—2 to 5 inches; gravelly silt loam

*Subsoil layer:*

Bt—5 to 18 inches; gravelly silt loam

Btx—18 to 24 inches; gravelly loam

BCtx1—24 to 42 inches; gravelly silt loam

BCtx2—42 to 60 inches; gravelly loam

**Properties and Qualities**

*Drainage class:* well drained

*Parent material:* coarse-loamy till derived from limestone, sandstone, and shale

*Permeability:* very slow to moderately rapid

*Available water capacity:* low

*Reaction:* strongly acid to slightly alkaline

*Depth to restrictive feature:* 12 to 36 inches to fragipan

*Depth to high water table:* 20 to 42 inches

**Interpretative Groups**

*Land capability classification (non-irrigated):* 7s

*Hydrologic group:* C

### ***Minor Components***

- Very deep, moderately well drained Cambridge soils
- Moderately deep, well drained Lordstown soils

## **WacD—Wallpack silt loam, 15 to 25 percent slopes**

### ***Map Unit Setting***

*Slope:* moderately steep

*Landscape:* till plains

*Landform:* ridges

### ***Map Unit Composition***

*Wallpack and similar soils:* 85 percent

*Minor components:* 15 percent

### ***Description of Wallpack and similar soils***

The typical sequence, depth, and composition of the layers of the soil are as follows—

*Surface layer:*

Ap1—0 to 3 inches; silt loam

Ap2—3 to 9 inches; gravelly silt loam

*Subsoil layer:*

Bt—9 to 16 inches; gravelly silt loam

Btx1—16 to 25 inches; gravelly silt loam

Btx2—25 to 65 inches; very gravelly silt loam

### **Properties and Qualities**

*Drainage class:* well drained

*Parent material:* coarse-loamy till derived from limestone, sandstone, and shale

*Permeability:* very slow to moderately rapid

*Available water capacity:* very low

*Reaction:* strongly acid to slightly alkaline

*Depth to restrictive feature:* 12 to 36 inches to fragipan

*Depth to high water table:* 23 to 45 inches

### **Interpretative Groups**

*Land capability classification (non-irrigated):* 4e

*Hydrologic group:* C

### ***Minor Components***

- Very deep, moderately well drained Cambridge soils
- Moderately deep, well drained Lordstown soils

## **WacDc—Wallpack silt loam, 15 to 35 percent slopes, extremely stony**

### ***Map Unit Setting***

*Slope:* moderately steep or steep

*Landscape:* till plains

*Landform:* ridges

*Surface cover:* 3 to 14 percent stones



**Map Unit Composition**

*Wallpack and similar soils:* 85 percent

*Minor components:* 15 percent

**Description of Wallpack and similar soils**

The typical sequence, depth, and composition of the layers of the soil are as follows—

*Surface layer:*

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 2 inches; gravelly silt loam

*Subsurface layer:*

AB—2 to 5 inches; gravelly silt loam

*Subsoil layer:*

Bt—5 to 18 inches; gravelly silt loam

Btx—18 to 24 inches; gravelly loam

BCtx1—24 to 42 inches; gravelly silt loam

BCtx2—42 to 60 inches; gravelly loam

**Properties and Qualities**

*Drainage class:* well drained

*Parent material:* coarse-loamy till derived from limestone, sandstone, and shale

*Permeability:* very slow to moderately rapid

*Available water capacity:* low

*Reaction:* strongly acid to slightly alkaline

*Depth to restrictive feature:* 12 to 36 inches to fragipan

*Depth to high water table:* 20 to 42 inches

**Interpretative Groups**

*Land capability classification (non-irrigated):* 7s

*Hydrologic group:* C

**Minor Components**

- Very deep, moderately well drained Cambridge soils
- Moderately deep, well drained Lordstown soils

**WATER—Water****Map Unit Composition**

*Water:* 100 percent

**Description of Water**

Water consists of areas inundated with water for most of the year and generally includes rivers, lakes and ponds. A typical pedon is not provided.

**Interpretative Groups**

*Land capability classification (non-irrigated):* not specified

*Hydrologic group:* not specified

## **WecBc—Wellsboro silt loam, 0 to 8 percent slopes, extremely stony**

### ***Map Unit Setting***

*Slope:* nearly level to gently sloping

*Landscape:* mountains

*Landform:* ground moraines

*Surface cover:* 3 to 14 percent stones

### ***Map Unit Composition***

*Wellsboro and similar soils:* 85 percent

*Minor components:* 15 percent

### ***Description of Wellsboro and similar soils***

The typical sequence, depth, and composition of the layers of the soil are as follows—

*Surface layer:*

Ap—0 to 8 inches; silt loam

*Subsoil layer:*

Bw1—8 to 15 inches; cobbly silt loam

Bw2—15 to 24 inches; cobbly loam

Bw3—24 to 29 inches; cobbly loam

Bx1—29 to 37 inches; cobbly sandy loam

Bx2—37 to 60 inches; cobbly sandy loam

### **Properties and Qualities**

*Drainage class:* moderately well drained

*Parent material:* coarse-loamy till derived from red shale and/or red sandstone and siltstone

*Permeability:* slow to moderate

*Available water capacity:* low

*Reaction:* extremely acid to strongly acid

*Depth to restrictive feature:* 12 to 30 inches to fragipan

*Depth to high water table:* 18 to 40 inches

### **Interpretative Groups**

*Land capability classification (non-irrigated):* 7s

*Hydrologic group:* C

### ***Minor Components***

- Very deep, somewhat poorly drained Morris soils
- Very deep, well drained Lackawanna soils

## **WecCc—Wellsboro silt loam, 8 to 15 percent slopes, extremely stony**

### ***Map Unit Setting***

*Slope:* strongly sloping

*Landscape:* mountains

*Landform:* ground moraines

*Surface cover:* 3 to 14 percent stones

**Map Unit Composition**

*Wellsboro and similar soils:* 85 percent

*Minor components:* 15 percent

**Description of Wellsboro and similar soils**

The typical sequence, depth, and composition of the layers of the soil are as follows—

*Surface layer:*

Ap—0 to 8 inches; silt loam

*Subsoil layer:*

Bw1—8 to 15 inches; cobbly silt loam

Bw2—15 to 24 inches; cobbly loam

Bw3—24 to 29 inches; cobbly loam

Bx1—29 to 37 inches; cobbly sandy loam

Bx2—37 to 60 inches; cobbly sandy loam

**Properties and Qualities**

*Drainage class:* moderately well drained

*Parent material:* coarse-loamy till derived from red shale and/or red sandstone and siltstone

*Permeability:* slow to moderate

*Available water capacity:* low

*Reaction:* extremely acid to strongly acid

*Depth to restrictive feature:* 12 to 30 inches to fragipan

*Depth to high water table:* 18 to 40 inches

**Interpretative Groups**

*Land capability classification (non-irrigated):* 7s

*Hydrologic group:* C

**Minor Components**

- Very deep, somewhat poorly drained Morris soils
- Very deep, well drained Lackawanna soils

**WumBc—Wurtsboro loam, 0 to 8 percent slopes, extremely stony****Map Unit Setting**

*Slope:* nearly level to gently sloping

*Landscape:* till plains

*Landform:* ground moraines

*Surface cover:* 3 to 14 percent stones

**Map Unit Composition**

*Wurtsboro and similar soils:* 85 percent

*Minor components:* 15 percent

**Description of Wurtsboro and similar soils**

The typical sequence, depth, and composition of the layers of the soil are as follows—

*Surface layer:*

Oi—0 to 2 inches; slightly decomposed plant material

A—2 to 3 inches; loam

*Subsurface layer:*

E—3 to 5 inches; fine sandy loam

*Subsoil layer:*

Bhs—5 to 6 inches; fine sandy loam

Bw1—6 to 18 inches; loam

Bw2—18 to 24 inches; gravelly loam

Bx1—24 to 30 inches; gravelly sandy loam

Bx2—30 to 60 inches; gravelly sandy loam

**Properties and Qualities**

*Drainage class:* moderately well drained

*Parent material:* coarse-loamy till derived from conglomerate and/or gray and red sandstone

*Permeability:* slow to moderately rapid

*Available water capacity:* low

*Reaction:* extremely acid to strongly acid

*Depth to restrictive feature:* 17 to 28 inches to fragipan

*Depth to high water table:* 7 to 40 inches

**Interpretative Groups**

*Land capability classification (non-irrigated):* 7s

*Hydrologic group:* C

**Minor Components**

- Very deep, well drained Swartswood soils

## **WusBc—Wurtsboro-Swartswood complex, 0 to 8 percent slopes, extremely stony**

**Map Unit Setting**

*Slope:* nearly level to gently sloping

*Landscape:* till plains

*Landform:* ground moraines

*Surface cover:* 3 to 14 percent stones

**Map Unit Composition**

*Wurtsboro and similar soils:* 60 percent

*Swartswood and similar soils:* 40 percent

**Description of Wurtsboro and similar soils**

The typical sequence, depth, and composition of the layers of the soil are as follows—

*Surface layer:*

Oi—0 to 2 inches; slightly decomposed plant material

A—2 to 3 inches; fine sandy loam

*Subsurface layer:*

E—3 to 5 inches; fine sandy loam

*Subsoil layer:*

Bhs—5 to 6 inches; fine sandy loam

Bw1—6 to 18 inches; sandy loam

Bw2—18 to 24 inches; gravelly sandy loam

Bx1—24 to 30 inches; gravelly sandy loam

Bx2—30 to 60 inches; gravelly sandy loam

**Properties and Qualities**

*Drainage class:* moderately well drained

*Parent material:* bouldery quartzose coarse-loamy drift derived from conglomerate

*Permeability:* slow to moderately rapid

*Available water capacity:* low

*Reaction:* extremely acid to strongly acid

*Depth to restrictive feature:* 17 to 28 inches to fragipan

*Depth to high water table:* 7 to 40 inches

**Interpretative Groups**

*Land capability classification (non-irrigated):* 7s

*Hydrologic group:* C

***Description of Swartswood and similar soils***

The typical sequence, depth, and composition of the layers of the soil are as follows—

*Surface layer:*

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 2 inches; loam

*Subsurface layer:*

E—2 to 3 inches; fine sandy loam

*Subsoil layer:*

Bhs—3 to 4 inches; gravelly fine sandy loam

Bw—4 to 21 inches; gravelly fine sandy loam

Bx1—21 to 32 inches; gravelly sandy loam

Bx2—32 to 60 inches; gravelly sandy loam

**Properties and Qualities**

*Drainage class:* well drained

*Parent material:* bouldery quartzose coarse-loamy drift derived from conglomerate

*Permeability:* slow to moderately rapid

*Available water capacity:* very low

*Reaction:* extremely acid to strongly acid

*Depth to restrictive feature:* 20 to 36 inches to fragipan

*Depth to high water table:* 20 to 36 inches

**Interpretative Groups**

*Land capability classification (non-irrigated):* 7s

*Hydrologic group:* C

**WusCc—Wurtsboro-Swartswood complex, 8 to 15 percent slopes, extremely stony*****Map Unit Setting***

*Slope:* strongly sloping

*Landscape:* till plains

*Landform:* ground moraines

*Surface cover:* 3 to 14 percent stones

### **Map Unit Composition**

*Wurtsboro and similar soils:* 60 percent

*Swartswood and similar soils:* 40 percent

### **Description of Wurtsboro and similar soils**

The typical sequence, depth, and composition of the layers of the soil are as follows—

#### *Surface layer:*

Oi—0 to 2 inches; slightly decomposed plant material

A—2 to 3 inches; fine sandy loam

#### *Subsurface layer:*

E—3 to 5 inches; fine sandy loam

#### *Subsoil layer:*

Bhs—5 to 6 inches; fine sandy loam

Bw1—6 to 18 inches; sandy loam

Bw2—18 to 24 inches; gravelly sandy loam

Bx1—24 to 30 inches; gravelly sandy loam

Bx2—30 to 60 inches; gravelly sandy loam

### **Properties and Qualities**

*Drainage class:* moderately well drained

*Parent material:* bouldery quartzose coarse-loamy drift derived from conglomerate

*Permeability:* slow to moderately rapid

*Available water capacity:* low

*Reaction:* extremely acid to strongly acid

*Depth to restrictive feature:* 17 to 28 inches to fragipan

*Depth to high water table:* 7 to 40 inches

### **Interpretative Groups**

*Land capability classification (non-irrigated):* 7s

*Hydrologic group:* C

### **Description of Swartswood and similar soils**

The typical sequence, depth, and composition of the layers of the soil are as follows—

#### *Surface layer:*

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 2 inches; loam

#### *Subsurface layer:*

E—2 to 3 inches; fine sandy loam

#### *Subsoil layer:*

Bhs—3 to 4 inches; gravelly fine sandy loam

Bw—4 to 21 inches; gravelly fine sandy loam

Bx1—21 to 32 inches; gravelly sandy loam

Bx2—32 to 60 inches; gravelly sandy loam

### **Properties and Qualities**

*Drainage class:* well drained

*Parent material:* bouldery quartzose coarse-loamy drift derived from conglomerate

*Permeability:* slow to moderately rapid  
*Available water capacity:* very low  
*Reaction:* extremely acid to strongly acid  
*Depth to restrictive feature:* 20 to 36 inches to fragipan  
*Depth to high water table:* 20 to 36 inches

**Interpretative Groups**

*Land capability classification (non-irrigated):* 7s  
*Hydrologic group:* C

**WusDc—Wurtsboro-Swartswood complex, 15 to 35 percent slopes, extremely stony*****Map Unit Setting***

*Slope:* moderately steep or steep  
*Landscape:* till plains  
*Landform:* ground moraines  
*Surface cover:* 3 to 14 percent stones

***Map Unit Composition***

*Wurtsboro and similar soils:* 80 percent  
*Swartswood and similar soils:* 20 percent

***Description of Wurtsboro and similar soils***

The typical sequence, depth, and composition of the layers of the soil are as follows—

***Surface layer:***

Oi—0 to 2 inches; slightly decomposed plant material  
A—2 to 3 inches; fine sandy loam

***Subsurface layer:***

E—3 to 5 inches; fine sandy loam

***Subsoil layer:***

Bhs—5 to 6 inches; fine sandy loam  
Bw1—6 to 18 inches; sandy loam  
Bw2—18 to 24 inches; gravelly sandy loam  
Bx1—24 to 30 inches; gravelly sandy loam  
Bx2—30 to 60 inches; gravelly sandy loam

**Properties and Qualities**

*Drainage class:* moderately well drained  
*Parent material:* bouldery quartzose coarse-loamy drift derived from conglomerate  
*Permeability:* slow to moderately rapid  
*Available water capacity:* low  
*Reaction:* extremely acid to strongly acid  
*Depth to restrictive feature:* 17 to 28 inches to fragipan  
*Depth to high water table:* 7 to 40 inches

**Interpretative Groups**

*Land capability classification (non-irrigated):* 7s  
*Hydrologic group:* C

### ***Description of Swartswood and similar soils***

The typical sequence, depth, and composition of the layers of the soil are as follows—

*Surface layer:*

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 2 inches; loam

*Subsurface layer:*

E—2 to 3 inches; fine sandy loam

*Subsoil layer:*

Bhs—3 to 4 inches; gravelly fine sandy loam

Bw—4 to 21 inches; gravelly fine sandy loam

Bx1—21 to 32 inches; gravelly sandy loam

Bx2—32 to 60 inches; gravelly sandy loam

### **Properties and Qualities**

*Drainage class:* well drained

*Parent material:* bouldery quartzose coarse-loamy drift derived from conglomerate

*Permeability:* slow to moderately rapid

*Available water capacity:* very low

*Reaction:* extremely acid to strongly acid

*Depth to restrictive feature:* 20 to 36 inches to fragipan

*Depth to high water table:* 20 to 36 inches

### **Interpretative Groups**

*Land capability classification (non-irrigated):* 7s

*Hydrologic group:* C



# Use and Management of the Soils

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This soil survey is an inventory and evaluation of the soils in the survey area. It can be used to adjust land uses to the limitations and potentials of natural resources and the environment. Also, it can help to prevent soil-related failures in land uses.

In preparing a soil survey, soil scientists, conservationists, engineers, and others collect extensive field data about the nature and behavioral characteristics of the soils. They collect data on erosion, droughtiness, flooding, and other factors that affect various soil uses and management. Field experience and collected data on soil properties and performance are used as a basis in predicting soil behavior.

Information in this section can be used to plan the use and management of soils for crops and pasture; as forestland; as sites for buildings, sanitary facilities, highways and other transportation systems, and parks and other recreational facilities; for agricultural waste management; and as wildlife habitat. It can be used to identify the potentials and limitations of each soil for specific land uses and to help prevent construction failures caused by unfavorable soil properties.

Planners and others using soil survey information can evaluate the effect of specific land uses on productivity and on the environment in all or part of the survey area. The survey can help planners to maintain or create a land use pattern in harmony with the natural soil.

Contractors can use this survey to locate sources of gravel, sand, reclamation material, roadfill, and topsoil. They can use it to identify areas where bedrock, saturated zones, or restrictive soil layers such as fragipans can cause difficulty in excavation.

Health officials, highway officials, engineers, and others may also find this survey useful. The survey can help them plan the safe disposal of wastes and locate sites for pavements, sidewalks, campgrounds, playgrounds, lawns, and trees and shrubs.

## Interpretive Ratings

The interpretive tables in this survey rate the soils in the survey area for various uses. Many of the tables identify the limitations that affect specified uses and indicate the severity of those limitations. The ratings in these tables are both verbal and numerical.

## Rating Class Terms

Rating classes are expressed in the tables in terms that indicate the extent to which the soils are limited by all of the soil features that affect a specified use or in terms that indicate the suitability of the soils for the use. Thus, the tables may show limitation classes or suitability classes. Terms for the limitation classes are *not limited*, *somewhat limited*, and *very limited*. The suitability ratings are expressed as *well suited*, *moderately suited*, *poorly suited*, and *unsuited* or as *good*, *fair*, and *poor*.

## Numerical Ratings

Numerical ratings in the tables indicate the relative severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.00 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact

on the use and the point at which the soil feature is not a limitation. The limitations appear in order from the most limiting to the least limiting. Thus, if more than one limitation is identified, the most severe limitation is listed first and the least severe one is listed last.

## Crops and Pasture

General management needed for crops and pasture is suggested in this section. The estimated yields of the main crops and pasture plants are listed, and the system of land capability classification used by the Natural Resources Conservation Service is explained.

Planners of management systems for individual fields or farms should consider the detailed information given in the description of each soil under the heading “Detailed Soil Map Units.” Specific information can be obtained from the local office of the Natural Resources Conservation Service or Rutgers Cooperative Extension.

Corn is the dominant row crop in Sussex County. Other grain crops grown in the county are oats and wheat. Soybeans, grain sorghum, and similar crops can also be grown profitably if economic conditions are favorable (USDA, June 2004).

Hay of alfalfa, small grains, and grasses is the most common close-growing crop (USDA, June 2004).

The specialty crops grown in the survey area include vegetables, small fruits, tree fruits, flowers, nursery plants, and Christmas trees (USDA, June 2004).

Deep and very deep soils that are characterized by good natural drainage and warm up early in spring are well suited to row crops, specialty crops, and the production of hay. These soils include the Colonie, Delaware, Hazen, Hoosic, Riverhead, and Unadilla soils that have slopes of less than 8 percent (fig 4). Crops



Figure 4.—An area of Unadilla silt loam, 0 to 3 percent slopes, in the Upper Delaware Valley, is used for growing corn. These soils formed in alluvium deposited by the Delaware River.

generally can be planted and harvested earlier on these soils than on other soils in the survey area.

## **Managing Cropland**

The management systems needed on cropland are those that protect or improve the soil, help to control erosion, and minimize the water pollution caused by plant nutrients, soil particles, and plant residue carried by runoff.

Water erosion is a major hazard on most of the soils used for crops in Sussex County. It is a hazard where slopes are more than 2 percent. Most of the soils in Sussex County occur on slopes of more than 2 percent. As the slope increases, the hazard of erosion and the difficulty in controlling erosion also increase.

Loss of the surface layer through erosion is damaging for two reasons. First, productivity is reduced as the surface layer is lost and part of the subsoil is incorporated into the plow layer. Loss of the surface layer is especially damaging on soils that have a layer in or below the subsoil that limits the depth of the root zone, such as the fragipan in Rockaway, Swartswood, Venango, Wallpack, and Wurtsboro soils and the bedrock in Farmington, Galway, Manlius, and Nassau soils. Second, erosion on farmland results in the sedimentation of streams. Control of erosion minimizes this pollution and improves the quality of water for municipal use, for recreation, and for fish and wildlife.

Erosion-control practices provide a protective surface cover, help to control runoff, and increase the rate of water infiltration. A cropping system that keeps a plant cover on the surface for extended periods generally can keep soil losses to an amount that does not reduce the productivity of the soil. In sloping areas on livestock farms, which require pasture and hay, including forage crops of grasses and legumes in the cropping system helps to control erosion. The forage crops also add nitrogen to the soil and improve soil tilth.

Minimum tillage, which leaves crop residue on the surface, increases the rate of water infiltration, and reduces the hazards of runoff and erosion. This practice can be effective on most of the soils in the survey area. In the more sloping areas used for corn, no-till farming is effective in controlling erosion.

Terraces and diversions reduce the length of slopes and thus help to control runoff and erosion. They are most effective on deep, well drained soils that have regular slopes, such as Colonie, Delaware, Hazen, Hoosic, Otisville, Riverhead, and Unadilla soils. These measures are less effective on soils that have irregular slopes, would be excessively wet in the terrace channels, or have bedrock within a depth of 40 inches.

Contour farming and contour stripcropping help to control erosion in the survey area. They are best suited to soils that have smooth, uniform slopes, including most areas of Colonie, Delaware, Hazen, Hoosic, Manlius, Nassau, Otisville, Riverhead, Rockaway, Swartswood, Venango, Unadilla, Wallpack, and Wurtsboro soils.

Information about erosion-control measures for each kind of soil in the survey area is available at the local offices of the Natural Resources Conservation Service.

Soil wetness is a management concern on some of the soils used for crops in Sussex County. Some soils are so wet that production of the crops commonly grown in the survey area is difficult. Fredon, Venango, and other somewhat poorly drained soils are so wet that crops are damaged during most years unless a drainage system is installed.

The soils in Sussex County normally have low pH and fertility levels. Additions of lime and fertilizer are needed for the production of most kinds of crops, and their application should be based on the results of soil tests, the needs of the crop, and the expected level of yields. Rutgers Cooperative Research and Extension can help to determine the kind and amount of fertilizer and lime needed and the proper method of application.

Soil tilth is an important factor affecting seed germination and the infiltration of water into the soil. Soils that have good tilth are granular and porous.

Some of the soils in the survey area have a high percentage of surface stones, which affects the use of tillage implements (fig 5).

## Managing Pasture and Hayland

Most of the pasture and hayland in Sussex County is used to grow hay of alfalfa, small grains, and grasses. The hay is harvested and baled for use as animal feed.

A successful livestock enterprise depends on a forage program that provides large quantities of good-quality feed. On much of the hayland and pasture in Sussex County, renovation, brush control, and measures that prevent overgrazing are needed.

The soils in Sussex County vary widely in their ability to produce grasses and legumes because of differences in depth to bedrock or to other limiting layers, internal drainage, available water capacity, and many other properties. The forage species selected for planting should be those that are suited to the different kinds of soil.

The nearly level and gently sloping, deep and very deep, well drained soils should be planted to the highest producing crops, such as corn silage, alfalfa, or a mixture of alfalfa and orchardgrass or of alfalfa and timothy. Sod-forming grasses, such as bluegrass, minimize erosion in the steeper areas. Alfalfa should be seeded with cool-season grasses in areas where the soils are at least 2 feet deep and are well drained. The more poorly drained soils and the soils that are less than 2 feet deep are suited to clover-grass mixtures or to pure stands of clover or grasses. Legumes can be established through renovation in areas that support sod-forming grasses.

The forage species selected for planting should be those that are suited not only to



Figure 5.—Surface stones create use and management concerns for many of the soils in Sussex County, such as in this area of Rockaway loam, thin fragipan, 15 to 35 percent slopes, extremely stony, in the Highlands.

the soil but also to the intended use. They should be those that provide the maximum quality and versatility in the forage program. Legumes generally produce higher quality feed than grasses. As a result, they should be grown to the maximum extent possible. The taller legumes, such as alfalfa and red clover, are more versatile than legumes that are used primarily for grazing, such as white clover. Orchardgrass and timothy are best suited to use as hay and silage.

Cool-season grasses can be grown for both pasture and hay. Their growth occurs in the period August through November which makes them available for grazing late in fall and in winter. For maximum production, nitrogen fertilizer should be applied during the stockpiling period. The rate of application should be based on the desired production level. Examples of cool-season grasses are Kentucky bluegrass and timothy.

Warm-season grasses planted from early April to late May help to alleviate the “summer slump” of cool-season grasses. They grow well during warm periods. Their greatest growth occurs from mid-June to September, which is the period when growth of cool-season grasses is slow. Examples of warm-season grasses are Indiangrass and switchgrass.

Renovation can increase forage yields in areas that have a good stand of grass. Renovation involves partial destruction of the sod, applications of lime and fertilizer, and seeding of the desirable forage species. Adding legumes to these grass stands provides high-quality feed. Legumes increase summer production. They also take nitrogen from the air. Under growing conditions, alfalfa can fix 200 to 300 pounds of nitrogen per acre per year; red clover, 100 to 200 pounds; and ladino clover, 100 to 150 pounds.

Additional information about managing pasture and hayland can be obtained from local offices of the Natural Resources Conservation Service and Rutgers Cooperative Extension.

## **Yields per Acre**

The average yields per acre shown in [table 5](#) in this survey are those that can be expected of the principal crops under a high level of management. In any given year, yields may be higher or lower than those indicated in the table because of variations in rainfall and other climatic factors. The land capability classification of map units in the survey area also is shown in the table.

The yields are based mainly on the experience and records of farmers, conservationists, and extension agents. Available yield data from nearby counties and results of field trials and demonstrations also are considered.

The management needed to obtain the indicated yields of the various crops depends on the kind of soil and the crop. Management can include drainage, erosion control, and protection from flooding; the proper planting and seeding rates; suitable high-yielding crop varieties; appropriate and timely tillage; control of weeds, plant diseases, and harmful insects; favorable soil reaction and optimum levels of nitrogen, phosphorus, potassium, and trace elements for each crop; effective use of crop residue, barnyard manure, and green manure crops; and harvesting that ensures the smallest possible loss.

The estimated yields reflect the productive capacity of each soil for each of the principal crops. Yields are likely to increase as new production technology is developed. The productivity of a given soil compared with that of other soils, however, is not likely to change.

Crops other than those shown in [table 5](#) are grown in the survey area, but estimated yields are not listed because the acreage of such crops is small. The local office of the Natural Resources Conservation Service or of Rutgers Cooperative



Extension can provide information about the management and productivity of the soils for those crops.

## Land Capability Classification

Land capability classification shows, in a general way, the suitability of soils for most kinds of field crops. Crops that require special management are excluded. The soils are grouped according to their limitations for field crops, the risk of damage if they are used for crops, and the way they respond to management. The criteria used in grouping the soils do not include major and generally expensive landforming that would change slope, depth, or other characteristics of the soils, nor do they include possible but unlikely major reclamation projects. Capability classification is not a substitute for interpretations designed to show suitability and limitations of groups of soils for forestland or engineering purposes.

In the capability system, soils are generally grouped at three levels—capability class, subclass, and unit (USDA, 1961).

*Capability classes*, the broadest groups, are designated by the numbers 1 through 8. The numbers indicate progressively greater limitations and narrower choices for practical use. The classes are defined as follows:

Class 1 soils have slight limitations that restrict their use.

Class 2 soils have moderate limitations that restrict the choice of plants or that require moderate conservation practices.

Class 3 soils have severe limitations that restrict the choice of plants or that require special conservation practices, or both.

Class 4 soils have very severe limitations that restrict the choice of plants or that require very careful management, or both.

Class 5 soils are subject to little or no erosion but have other limitations, impractical to remove, that restrict their use mainly to pasture, forestland, or wildlife habitat.

Class 6 soils have severe limitations that make them generally unsuitable for cultivation and that restrict their use mainly to pasture, forestland, or wildlife habitat.

Class 7 soils have very severe limitations that make them unsuitable for cultivation and that restrict their use mainly to grazing, forestland, or wildlife habitat.

Class 8 soils and miscellaneous areas have limitations that preclude commercial plant production and that restrict their use to recreational purposes, wildlife habitat, watershed, or esthetic purposes.

*Capability subclasses* are soil groups within one class. They are designated by adding a small letter, *e*, *w*, *s*, or *c*, to the class numeral, for example, 2*e*. The letter *e* shows that the main hazard is the risk of erosion unless close-growing plant cover is maintained; *w* shows that water in or on the soil interferes with plant growth or cultivation (in some soils the wetness can be partly corrected by artificial drainage); *s* shows that the soil is limited mainly because it is shallow, droughty, or stony; and *c*, used in only some parts of the United States, shows that the chief limitation is climate that is very cold or very dry.

In class 1 there are no subclasses because the soils of this class have few limitations. Class 5 contains only the subclasses indicated by *w*, *s*, or *c* because the soils in class 5 are subject to little or no erosion. They have other limitations that restrict their use to pasture, forestland, wildlife habitat, or recreation.

*Capability units* are soil groups within a subclass. The soils in a capability unit are enough alike to be suited to the same crops and pasture plants, to require similar management, and to have similar productivity. Capability units are generally designated by adding an Arabic numeral to the subclass symbol, for example, 2*e*-4 and 3*e*-6. These units are not given in all soil surveys.

The capability classification of the soils in this survey area is given in the section “Detailed Soil Map Units” and in [table 5](#). The acreage by capability class and subclass is given in [table 6](#).

## Prime Farmland and Other Important Farmlands

[Table 7](#) lists the map units in the survey area that are considered prime farmland, unique farmland, and farmland of statewide or local importance. This list does not constitute a recommendation for a particular land use.

In an effort to identify the extent and location of important farmlands, the Natural Resources Conservation Service, in cooperation with other interested Federal, State, and local government organizations, has inventoried land that can be used for the production of the Nation’s food supply.

*Prime farmland* is of major importance in meeting the Nation’s short- and long-range needs for food and fiber. Because the supply of high-quality farmland is limited, the U.S. Department of Agriculture recognizes that responsible levels of government, as well as individuals, should encourage and facilitate the wise use of our Nation’s prime farmland.

Prime farmland, as defined by the U.S. Department of Agriculture, is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is available for these uses. It could be cultivated land, pastureland, forestland, or other land, but it is not urban or built-up land or water areas. The soil quality, growing season, and moisture supply are those needed for the soil to economically produce sustained high yields of crops when proper management, including water management, and acceptable farming methods are applied. In general, prime farmland has an adequate and dependable supply of moisture from precipitation or irrigation, a favorable temperature and growing season, acceptable acidity or alkalinity, and few or no rocks. The water supply is dependable and of adequate quality. Prime farmland is permeable to water and air. It is not excessively erodible or saturated with water for long periods, and it either is not frequently flooded during the growing season or is protected from flooding. Slope ranges mainly from 0 to 6 percent. More detailed information about the criteria for prime farmland is available at the local office of the Natural Resources Conservation Service.

About 33,338 acres, or nearly 10 percent of Sussex County, meets the soil requirements for prime farmland. Areas of prime farmland are scattered throughout the county.

For some soils identified in [table 7](#) as prime farmland, measures that overcome a hazard or limitation, such as flooding, presence of a saturated zone, and droughtiness, are needed. Onsite evaluation is needed to determine whether or not the hazard or limitation has been overcome by corrective measures.

*Unique farmland* is land other than prime farmland that is used for the production of specific high-value food and fiber crops, such as citrus, tree nuts, olives, cranberries, and other fruits and vegetables. It has the special combination of soil quality, growing season, moisture supply, temperature, humidity, air drainage, elevation, and aspect needed for the soil to economically produce sustainable high yields of these crops when properly managed. The water supply is dependable and of adequate quality. Nearness to markets is an additional consideration. Unique farmland is not based on national criteria. It commonly is in areas where there is a special microclimate, such as the wine country in California.

In some areas, land that does not meet the criteria for prime or unique farmland is considered to be *farmland of statewide importance* for the production of food, feed, fiber, forage, and oilseed crops. The criteria for defining and delineating farmland of statewide importance are determined by the appropriate State agencies. Generally,

this land includes areas of soils that nearly meet the requirements for prime farmland and that economically produce high yields of crops when treated and managed according to acceptable farming methods. Some areas may produce as high a yield as prime farmland if conditions are favorable. Farmland of statewide importance may include tracts of land that have been designated for agriculture by State law.

In some areas that are not identified as having national or statewide importance, land is considered to be *farmland of local importance* for the production of food, feed, fiber, forage, and oilseed crops. This farmland is identified by the appropriate local agencies. Farmland of local importance may include tracts of land that have been designated for agriculture by local ordinance.

## Forestland Productivity and Management

The majority of the forestland in Sussex County that can be classified as timberland is privately owned. The remaining acreage of this timberland is under County, municipal, State or Federal ownership (Miles, 2005).

Forest types considered for timber that occur in the county include black ash-American elm-red maple, black cherry, chestnut oak, Eastern red cedar, Eastern red cedar-hardwood, red maple, sugarberry-hackberry-elm-green ash, sugar maple-beech-yellow birch, yellow-poplar, white oak-red oak-hickory, willow, and mixed upland hardwoods (Miles, 2005).

Tables 8 through 13 described in this section can help forest owners or managers plan the use of soils for wood crops. They show the potential productivity of the soils for wood crops and rate the soils according to the limitations that affect various aspects of forestland management.

### Forestland Productivity

In [table 8](#) the *potential productivity* of merchantable or *common trees* on a soil is expressed as a site index and as a volume number. The *site index* is the average height, in feet, that dominant and codominant trees of a given species attain in a specified number of years. The site index applies to fully stocked, even-aged, unmanaged stands. Commonly grown trees are those that forest managers generally favor in intermediate or improvement cuttings. They are selected on the basis of growth rate, quality, value, and marketability. More detailed information regarding site index is available in the "National Forestry Manual," which is available in local offices of the Natural Resources Conservation Service or on the Internet.

The *volume of wood fiber*, a number, is the yield likely to be produced by the most important tree species. This number, expressed as cubic feet per acre per year and calculated at the age of culmination of the mean annual increment (CMAI), indicates the amount of fiber produced in a fully stocked, even-aged, unmanaged stand.

*Trees to manage* are those that are preferred for planting, seeding, or natural regeneration and those that remain in the stand after thinning or partial harvest.

### Forestland Management

In [tables 9, 10, 11, 12, and 13](#), interpretive ratings are given for various aspects of forestland management. The ratings are both verbal and numerical.

Some rating class terms indicate the degree to which the soils are suited to a specified aspect of forestland management. *Well suited* indicates that the soil has features that are favorable for the specified management aspect and has no limitations. Good performance can be expected, and little or no maintenance is needed. *Moderately suited* indicates that the soil has features that are moderately favorable for the specified management aspect. One or more soil properties are less



than desirable, and fair performance can be expected. Some maintenance is needed. *Poorly suited* indicates that the soil has one or more properties that are unfavorable for the specified management aspect. Overcoming the unfavorable properties requires special design, extra maintenance, and costly alteration. *Unsuited* indicates that the expected performance of the soil is unacceptable for the specified management aspect or that extreme measures are needed to overcome the undesirable soil properties.

Numerical ratings in the tables indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the specified aspect of forestland management (1.00) and the point at which the soil feature is not a limitation (0.00).

Rating class terms for fire damage and seedling mortality are expressed as *low*, *moderate*, and *high*. Where these terms are used, the numerical ratings indicate gradations between the point at which the potential for fire damage or seedling mortality is highest (1.00) and the point at which the potential is lowest (0.00).

The paragraphs that follow indicate the soil properties considered in rating the soils. More detailed information about the criteria used in the ratings is available in the "National Forestry Manual," which is available in local offices of the Natural Resources Conservation Service or on the Internet.

For *limitations affecting construction of haul roads and log landings*, the ratings are based on slope, flooding, plasticity index, the hazard of soil slippage, content of sand, the Unified classification, stoniness, depth to bedrock, depth to a saturated zone, and ponding. The limitations are described as slight, moderate, or severe. A rating of *slight* indicates that no significant limitations affect construction activities, *moderate* indicates that one or more limitations can cause some difficulty in construction, and *severe* indicates that one or more limitations can make construction very difficult or very costly.

The ratings of *suitability for log landings* are based on slope, stoniness, plasticity index, content of sand, the Unified classification, depth to a saturated zone, ponding, flooding, and the hazard of soil slippage. The soils are described as well suited, moderately suited, or poorly suited to use as log landings.

Ratings in the column *soil rutting hazard* are based on depth to a saturated zone, rock fragments on or below the surface, the Unified classification, depth to a restrictive layer, and slope. Ruts form as a result of the operation of forest equipment. The hazard is described as slight, moderate, or severe. A rating of *slight* indicates that the soil is subject to little or no rutting, *moderate* indicates that rutting is likely, and *severe* indicates that ruts form readily.

Ratings in the column *hazard of off-road or off-trail erosion* are based on slope, organic matter content, and the soil erodibility factor K. The soil loss is caused by sheet or rill erosion in off-road or off-trail areas where 50 to 75 percent of the surface has been exposed by logging, grazing, mining, or other kinds of disturbance. The hazard is described as slight, moderate, severe, or very severe. A rating of *slight* indicates that erosion is unlikely under ordinary climatic conditions; *moderate* indicates that some erosion is likely and that erosion-control measures may be needed; *severe* indicates that erosion is very likely and that erosion-control measures, including revegetation of bare areas, are advised; and *very severe* indicates that significant erosion is expected, loss of soil productivity and off-site damage are likely, and erosion-control measures are costly and generally impractical.

Ratings in the column *hazard of erosion on roads and trails* are based on the soil erodibility factor K, slope, and content of rock fragments and organic matter. The ratings apply to unsurfaced roads and trails. The hazard is described as slight, moderate, or severe. A rating of *slight* indicates that little or no erosion is likely; *moderate* indicates that some erosion is likely, that the roads or trails may require

occasional maintenance, and that simple erosion-control measures are needed; and *severe* indicates that significant erosion is expected, that the roads or trails require frequent maintenance, and that costly erosion-control measures are needed.

Ratings in the column *suitability for roads (natural surface)* are based on slope, stoniness, plasticity index, content of sand, the Unified classification, depth to a saturated zone, ponding, flooding, and the hazard of soil slippage. The ratings indicate the suitability for using the natural surface of the soil for roads. The soils are described as well suited, moderately suited, or poorly suited to this use.

Ratings in the columns *suitability for hand planting* and *suitability for mechanical planting* are based on slope, depth to a restrictive layer, content of sand, plasticity index, rock fragments on or below the surface, depth to a saturated zone, and ponding. The soils are described as well suited, moderately suited, poorly suited, or unsuited to these methods of planting. It is assumed that necessary site preparation is completed before seedlings are planted.

Ratings in the column *suitability for use of harvesting equipment* are based on slope, stoniness, plasticity index, content of sand, the Unified classification, depth to a saturated zone, and ponding. The soils are described as well suited, moderately suited, or poorly suited to this use.

Ratings in the column *suitability for mechanical site preparation (surface)* are based on slope, depth to a restrictive layer, plasticity index, rock fragments on or below the surface, depth to a saturated zone, and ponding. The soils are described as well suited, poorly suited, or unsuited to this management activity. The part of the soil from the surface to a depth of about 1 foot is considered in the ratings.

Ratings in the column *suitability for mechanical site preparation (deep)* are based on slope, depth to a restrictive layer, rock fragments on or below the surface, depth to a saturated zone, and ponding. The soils are described as well suited, poorly suited, or unsuited to this management activity. The part of the soil from the surface to a depth of about 3 feet is considered in the ratings.

Ratings in the column *potential for damage to soil by fire* are based on texture of the surface layer, content of rock fragments and organic matter in the surface layer, thickness of the surface layer, and slope. The soils are described as having a low, moderate, or high potential for this kind of damage. The ratings indicate an evaluation of the potential impact of prescribed fires or wildfires that are intense enough to remove the duff layer and consume organic matter in the surface layer.

Ratings in the column *potential for seedling mortality* are based on flooding, ponding, depth to a saturated zone, content of lime, soil reaction, available water capacity, soil moisture regime, soil temperature regime, and slope. The soils are described as having a low, moderate, or high potential for seedling mortality.

## Recreational Development

Sussex County has many areas of scenic, geologic, and historic interest (fig 6). These areas are used for camping, hiking, hunting, fishing, sightseeing, picnicking, and boating. State-owned public lands available for recreation include Allamuchy Mountain State Park, High Point State Park, Kittatinny Valley State Park, Stokes State Forest, Swartswood State Park, and Wawayanda State Park. Federal land available for recreation includes the Delaware Water Gap National Recreation Area owned by the National Park Service and the Wallkill River National Wildlife Refuge owned by the U.S. Fish and Wildlife Service.

In tables 14 and 15, the soils of the survey area are rated according to limitations that affect their suitability for recreational development. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect the recreational uses. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and



**Figure 6.—The summit of Kittatinny Mountain looking south across Culvers Gap, in an area of Arnot-Lordstown complex, 0 to 15 percent slopes, very rocky. This mountain provides some of the most spectacular views to be observed in Sussex County.**

very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the tables indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

The ratings in the tables are based on restrictive soil features such as depth to a saturated zone; slope; and the content of sand, clay, or organic matter in the surface layer. Susceptibility to flooding is considered. Not considered in the ratings, but important in evaluating a site, are the location and accessibility of the area, the size and shape of the area and its scenic quality, vegetation, access to water, potential water impoundment sites, and access to public sewer lines. The capacity of the soil to absorb septic tank effluent and the ability of the soil to support vegetation also are important. Soils that are subject to flooding are limited for recreational uses by the duration and intensity of flooding and the season when flooding occurs. In planning recreational facilities, onsite assessment of the height, duration, intensity, and frequency of flooding is essential.

The information in these tables can be supplemented by other information in this survey, for example, interpretations for dwellings without basements, for local roads and streets, and for individual subsurface sewage disposal fields.

*Camp areas* require site preparation, such as shaping and leveling the tent and parking areas, stabilizing roads and intensively used areas, and installing sanitary facilities and utility lines. Camp areas are subject to heavy foot traffic and some vehicular traffic. The ratings are based on the soil properties that affect the ease of developing camp areas and the performance of the areas after development. Slope, stoniness, and depth to bedrock or a fragipan are the main concerns affecting the development of camp areas. The soil properties that affect the performance of the areas after development are those that influence trafficability and promote the growth of vegetation, especially in heavily used areas. For good trafficability, the surface of camp areas should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are the content of sand, clay, gravel, or organic matter in the surface layer; depth to a saturated zone; ponding; flooding; permeability; and stoniness. The soil properties that affect the growth of plants are depth to bedrock or a fragipan, permeability, and toxic substances in the soil.

*Picnic areas* are subject to heavy foot traffic. Most vehicular traffic is confined to access roads and parking areas. The ratings are based on the soil properties that affect the ease of developing picnic areas and that influence trafficability and the growth of vegetation after development. Slope and stoniness are the main concerns affecting the development of picnic areas. For good trafficability, the surface of picnic areas should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are the content of sand, clay, gravel, or organic matter in the surface layer; depth to a saturated zone; ponding; flooding; permeability; and stoniness. The soil properties that affect the growth of plants are depth to bedrock or a fragipan, permeability, and toxic substances in the soil.

*Playgrounds* require soils that are nearly level, are free of stones, and can withstand intensive foot traffic. The ratings are based on the soil properties that affect the ease of developing playgrounds and that influence trafficability and the growth of vegetation after development. Slope and stoniness are the main concerns affecting the development of playgrounds. For good trafficability, the surface of the playgrounds should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are the content of sand, clay, gravel, or organic matter in the surface layer; depth to a saturated zone; ponding; flooding; permeability; and stoniness. The soil properties that affect the growth of plants are depth to bedrock or a fragipan, permeability, and toxic substances in the soil.

*Paths and trails* for hiking and horseback riding should require little or no slope modification through cutting and filling. The ratings are based on the soil properties that affect trafficability and erodibility. These properties are stoniness; depth to a saturated zone; ponding; flooding; slope; and the content of sand, clay, gravel, or organic matter in the surface layer.

*Off-road motorcycle trails* require little or no site preparation. They are not covered with surfacing material or vegetation. Considerable compaction of the soil material is likely. The ratings are based on the soil properties that influence erodibility, trafficability, dustiness, and the ease of revegetation. These properties are stoniness; slope; depth to a saturated zone; ponding; flooding; and content of sand, clay, gravel, or organic matter in the surface layer.

*Golf fairways* are subject to heavy foot traffic and some light vehicular traffic. Cutting or filling may be required. Irrigation is not considered in the ratings. The ratings are based on the soil properties that affect plant growth and trafficability after



vegetation is established. The properties that affect plant growth are soil reaction; depth to a saturated zone; ponding; depth to bedrock or a fragipan; the available water capacity in the upper 40 inches; and the content of calcium carbonate. The properties that affect trafficability are flooding; depth to a saturated zone; ponding; slope; stoniness; and the content of sand, clay, or organic matter in the surface layer. The suitability of the soil for traps, tees, roughs, and greens is not considered in the ratings.

## Wildlife Habitat

Sussex County has a large and varied population of fish and wildlife. The lakes, ponds, rivers, and streams support largemouth bass, smallmouth bass, channel catfish, black and white crappies, muskellunge, yellow perch, chain pickerel, northern pike, American shad, sunfish, trout, and walleye. Large mammals such as black bear and white-tailed deer are found throughout the county. Small mammals are also abundant in the survey area, and include coyotes, foxes, ruffed grouse, opossums, pheasants, quail, rabbits, raccoons, skunks, squirrels, wild turkeys and woodchucks. A variety of songbirds inhabit both farmed and wooded areas where food and cover are available. Wetlands and surface water areas provide resting and feeding areas for migratory waterfowl in fall and spring (Allan and others, 1963) (fig 7).

Soils affect the kind and amount of vegetation that is available to wildlife as food and cover. They also affect the construction of water impoundments. The kind and abundance of wildlife depend largely on the amount and distribution of food, cover, and water. Wildlife habitat can be created or improved by planting appropriate vegetation, by maintaining the existing plant cover, or by promoting the natural establishment of desirable plants.



**Figure 7.—The depressions in this area of Alden silt loam, 0 to 8 percent slopes, extremely stony, provide vital resting and feeding areas for migratory waterfowl in fall and spring.**

In [table 16](#), the soils in the survey area are rated according to their potential for providing habitat for various kinds of wildlife. This information can be used in planning parks, wildlife refuges, nature study areas, and other developments for wildlife; in selecting soils that are suitable for establishing, improving, or maintaining specific elements of wildlife habitat; and in determining the intensity of management needed for each element of the habitat.

The potential of the soil is rated good, fair, poor, or very poor. A rating of *good* indicates that the element or kind of habitat is easily established, improved, or maintained. Few or no limitations affect management, and satisfactory results can be expected. A rating of *fair* indicates that the element or kind of habitat can be established, improved, or maintained in most places. Moderately intensive management is required for satisfactory results. A rating of *poor* indicates that limitations are severe for the designated element or kind of habitat. Habitat can be created, improved, or maintained in most places, but management is difficult and must be intensive. A rating of *very poor* indicates that restrictions for the element or kind of habitat are very severe and that unsatisfactory results can be expected. Creating, improving, or maintaining habitat is impractical or impossible.

The elements of wildlife habitat are described in the following paragraphs.

*Grain and seed crops* are domestic grains and seed-producing herbaceous plants. Soil properties and features that affect the growth of grain and seed crops are depth of the root zone, texture of the surface layer, available water capacity, depth to a saturated zone, slope, stoniness, and flooding. Soil temperature and soil moisture also are considerations. Examples of grain and seed crops are corn, wheat, oats, and barley.

*Grasses and legumes* are domestic perennial grasses and herbaceous legumes. Soil properties and features that affect the growth of grasses and legumes are depth of the root zone, texture of the surface layer, available water capacity, depth to a saturated zone, stoniness, flooding, and slope. Soil temperature and soil moisture also are considerations. Examples of grasses and legumes are brome grass, clover, and alfalfa.

*Wild herbaceous plants* are native or naturally established grasses and forbs, including weeds. Soil properties and features that affect the growth of these plants are depth of the root zone, texture of the surface layer, available water capacity, depth to a saturated zone, stoniness, and flooding. Soil temperature and soil moisture also are considerations. Examples of wild herbaceous plants are goldenrod and gamma.

*Hardwood trees* and woody understory produce nuts or other fruit, buds, catkins, twigs, bark, and foliage. Soil properties and features that affect the growth of hardwood trees and shrubs are depth of the root zone, available water capacity, and wetness. Examples of these plants are oak, poplar, cherry, sweetgum, apple, hawthorn, dogwood, hickory, blackberry, and blueberry.

*Coniferous plants* furnish browse and seeds. Soil properties and features that affect the growth of coniferous trees, shrubs, and ground cover are depth of the root zone, available water capacity, and depth to a saturated zone. Examples of coniferous plants are pine, spruce, fir, cedar, and juniper.

*Wetland plants* are annual and perennial wild herbaceous plants that grow on moist or wet sites. Submerged or floating aquatic plants are excluded. Soil properties and features affecting wetland plants are texture of the surface layer, depth to a saturated zone, soil reaction, slope, and stoniness. Examples of wetland plants are rushes, sedges, and reeds.

*Shallow water areas* have an average depth of less than 5 feet. Some are naturally wet areas. Others are created by dams, levees, or other water-control structures. Soil properties and features affecting shallow water areas are depth to bedrock, depth to a saturated zone, stoniness, slope, and permeability. Examples of shallow water areas are marshes, waterfowl feeding areas, and ponds.

The habitat for various kinds of wildlife is described in the following paragraphs.

*Habitat for openland wildlife* consists of cropland, pasture, meadows, and areas that are overgrown with grasses, herbs, shrubs, and vines. These areas produce grain and seed crops, grasses and legumes, and wild herbaceous plants. Wildlife attracted to these areas include quail, pheasant, and red fox.

*Habitat for woodland wildlife* consists of areas of deciduous and/or coniferous plants and associated grasses, legumes, and wild herbaceous plants. Wildlife attracted to these areas include wild turkey, ruffed grouse, squirrels, gray fox, raccoon, deer, and bear.

*Habitat for wetland wildlife* consists of open, marshy or swampy shallow water areas. Some of the wildlife attracted to such areas are ducks, geese, herons, muskrat, mink, and beaver.

## Engineering

This section provides information for planning land uses related to urban development and to water management. Soils are rated for various uses, and the most limiting features are identified. Ratings are given for building site development, sanitary facilities, construction materials, and water management.

The ratings are based on observed performance of the soils and on the data in the tables described under the heading "Soil Properties."

*Information in this section is intended for land use planning, for evaluating land use alternatives, and for planning site investigations prior to design and construction. The information, however, has limitations. For example, estimates and other data generally apply only to that part of the soil between the surface and a depth of 5 to 7 feet. Because of the map scale, small areas of different soils may be included within the mapped areas of a specific soil.*

*The information is not site specific and does not eliminate the need for onsite investigation of the soils or for testing and analysis by personnel experienced in the design and construction of engineering works.*

*Government ordinances and regulations that restrict certain land uses or impose specific design criteria were not considered in preparing the information in this section. Local ordinances and regulations should be considered in planning, in site selection, and in design.*

Soil properties, site features, and observed performance were considered in determining the ratings in this section. During the fieldwork for this soil survey, determinations were made about particle-size distribution, liquid limit, plasticity index, soil reaction, depth to bedrock, hardness of bedrock within 5 to 7 feet of the surface, depth to a saturated zone, ponding, slope, likelihood of flooding, natural soil structure aggregation, and soil density. Data were collected about kinds of clay minerals, mineralogy of the sand and silt fractions, and the kinds of adsorbed cations. Estimates were made for erodibility, permeability, corrosivity, shrink-swell potential, available water capacity, and other behavioral characteristics affecting engineering uses.

This information can be used to evaluate the potential of areas for residential, commercial, industrial, and recreational uses; make preliminary estimates of construction conditions; evaluate alternative routes for roads, streets, highways, pipelines, and underground cables; evaluate alternative sites for sanitary landfills and individual subsurface sewage disposal fields; plan detailed onsite investigations of soils and geology; locate potential sources of gravel, sand, reclamation material, roadfill, and topsoil; plan structures for water management; and predict performance of proposed small structures and pavements by comparing the performance of existing similar structures on the same or similar soils.

The information in the tables, along with the soil maps, the soil descriptions, and other data provided in this survey, can be used to make additional interpretations.

Some of the terms used in this soil survey have a special meaning in soil science and are defined in the Glossary.

## Building Site Development

Soil properties influence the development of building sites, including the selection of the site, the design of the structure, construction, performance after construction, and maintenance. [Tables 17](#) and [18](#) show the degree and kind of soil limitations that affect dwellings with and without basements, small commercial buildings, local roads and streets, shallow excavations, and lawns and landscaping.

The ratings in the tables are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect building site development. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the tables indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

*Dwellings* are single-family houses of three stories or less. For dwellings without basements, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of 2 feet or at the depth of maximum frost penetration, whichever is deeper. For dwellings with basements, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of about 7 feet. The ratings for dwellings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the load-supporting capacity include depth to a saturated zone, ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility. Compressibility is inferred from the Unified classification. The properties that affect the ease and amount of excavation include depth to a saturated zone, ponding, flooding, slope, depth to bedrock or a fragipan, hardness of bedrock or a fragipan, and the amount and size of rock fragments.

*Small commercial buildings* are structures that are less than three stories high and do not have basements. The foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of 2 feet or at the depth of maximum frost penetration, whichever is deeper. The ratings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the load-supporting capacity include depth to a saturated zone, ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility (which is inferred from the Unified classification). The properties that affect the ease and amount of excavation include flooding, depth to a saturated zone, ponding, slope, depth to bedrock or a fragipan, hardness of bedrock or a fragipan, and the amount and size of rock fragments.



*Local roads and streets* have an all-weather surface and carry automobile and light truck traffic all year. They have a subgrade of cut or fill soil material; a base of gravel, crushed rock, or soil material stabilized by lime or cement; and a surface of flexible material (asphalt), rigid material (concrete), or gravel with a binder. The ratings are based on the soil properties that affect the ease of excavation and grading and the traffic-supporting capacity. The properties that affect the ease of excavation and grading are depth to bedrock or a fragipan, hardness of bedrock or a fragipan, depth to a saturated zone, ponding, flooding, the amount and size of rock fragments, and slope. The properties that affect the traffic-supporting capacity are soil strength (as inferred from the AASHTO group index number), subsidence, linear extensibility (shrink-swell potential), the potential for frost action, depth to a saturated zone, and ponding.

*Shallow excavations* are trenches or holes dug to a maximum depth of 5 or 6 feet for graves, utility lines, open ditches, or other purposes. The ratings are based on the soil properties that influence the ease of digging and the resistance to sloughing. Depth to bedrock or a fragipan, hardness of bedrock or a fragipan, and the amount and size of rock fragments influence the ease of digging, filling, and compacting. Depth to a saturated zone, flooding, and ponding may restrict the period when excavations can be made. Slope influences the ease of using machinery. Soil texture, depth to a saturated zone, and linear extensibility (shrink-swell potential) influence the resistance to sloughing.

*Lawns and landscaping* require soils on which turf and ornamental trees and shrubs can be established and maintained. Irrigation is not considered in the ratings. The ratings are based on the soil properties that affect plant growth and trafficability after vegetation is established. The properties that affect plant growth are soil reaction; depth to a saturated zone; ponding; depth to bedrock or a fragipan; the available water capacity in the upper 40 inches; and the content of calcium carbonate. The properties that affect trafficability are flooding, depth to a saturated zone, ponding, slope, and the content of sand, clay, gravel and other rock fragments, or organic matter in the surface layer.

## Sanitary Facilities

Tables 19 and 20 show the degree and kind of soil limitations that affect individual subsurface sewage disposal fields, sanitary landfills, and daily cover for landfills. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect these uses. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the tables indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

A *disposal field* is an area where the sanitary sewage is discharged into the ground to treat the sewage in a manner that will retain most of the suspended solids in a septic tank and to discharge the effluent to the disposal field (NJDEP, 1999). The soil is evaluated from the surface to a depth of 300 centimeters, or approximately 10

feet. The ratings are based on the soil properties that affect absorption of the effluent, construction, and pollution of ground and surface water. Zone of saturation (apparent and perched water table), permeability, cemented horizon and substratum, and the percentage of rock fragments affect the absorption and treatment of the effluent. Fractured and massive bedrock interferes with installation and absorption of the effluent.

Depth to a zone of saturation has a major influence on the suitability of the soil for a septic system because of public health concerns. A high water table restricts the ability of the system to remove pathogens, nutrients, and other waste components.

Massive bedrock and a hydraulically restrictive substratum or horizon can affect excavation and result in lateral seepage of the effluent. The slow permeability impedes effluent infiltration, increasing the risk of surface-water pollution. Very rapid permeability caused by fractured bedrock and/or an excessively coarse textured substratum or horizon may result in inadequate filtering of the effluent and thus in ground-water contamination.

The *type of installation permitted in NJ* refers to those individual subsurface sewage disposal field installations that are permitted for use in New Jersey in accordance with “Standards for Individual Subsurface Sewerage Disposal Services, Subchapter 10. Disposal Fields,” in the State of New Jersey Administrative Code NJAC 7:9A. The selection of a particular disposal field installation is dependent on the NJAC 7:9A suitability class assigned to a soil, which relates to the presence of limiting features such as fractured or massive bedrock, hydraulically restrictive horizons or substratums, excessively coarse horizons or substratums, or perched or apparent zones of saturation.

The ratings for the *NJ suitability class* are in accordance with “Standards for Individual Subsurface Sewerage Disposal Services, Subchapter 10. Disposal Fields,” in the State of New Jersey Administrative Code NJAC 7:9A, and are assigned based on the presence of limiting features such as fractured or massive bedrock, hydraulically restrictive horizons or substratums, excessively coarse horizons or substratums, or perched or apparent zones of saturation. The suitability class is used to determine the type of disposal field installation to be used on a particular soil. The following are descriptions of the soil suitability class codes used in this table.

The term “water table” refers to the upper surface of a zone of saturation. The code “Wr” refers to a regional water table, and the code “Wp” refers to a perched water table.

The term “horizon” refers to a layer of soil or rock material in a soil boring or pit differing from the layers of soil above and below it in one or more soil morphological characteristics, including color, texture, content of rock fragments, structure, consistence, and redoximorphic features. The code “Hc” refers to an excessively coarse textured horizon, and the code “Hr” refers to a hydraulically restrictive horizon.

The term “substratum” refers to a layer of soil or rock material with an upper surface that is the deepest observed in the soil boring or pit. The lower extent of the layer is undetermined; the layer is assumed to extend through the required depth of evaluation (10 feet). The code “Sc” refers to an excessively coarse texture, and the code “Sr” refers to a hydraulically restrictive layer.

A *trench sanitary landfill* is an area where solid waste is placed in successive layers in an excavated trench. The waste is spread, compacted, and covered daily with a thin layer of soil excavated at the site. When the trench is full, a final cover of soil material at least 2 feet thick is placed over the landfill. The ratings in [table 20](#) are based on the soil properties that affect the risk of pollution, the ease of excavation, trafficability, and revegetation. These properties include permeability, depth to bedrock or a fragipan, depth to a saturated zone, ponding, slope, flooding, texture, content of gravel or other rock fragments, content of organic matter, and soil reaction.

Unless otherwise stated, the ratings apply only to that part of the soil within a depth of about 6 feet. For deeper trenches, onsite investigation may be needed.

Hard, nonrippable bedrock, creviced bedrock, or highly permeable strata in or directly below the proposed trench bottom can affect the ease of excavation and the hazard of ground-water pollution. Slope affects construction of the trenches and the movement of surface water around the landfill. It also affects the construction and performance of roads in areas of the landfill.

Soil texture and consistence affect the ease with which the trench is dug and the ease with which the soil can be used as daily or final cover. They determine the workability of the soil when dry and when wet. Soils that are plastic and sticky when wet are difficult to excavate, grade, or compact and are difficult to place as a uniformly thick cover over a layer of refuse.

The soil material used as the final cover for a trench landfill should be suitable for plants. It should not be too low in pH. The surface layer generally has the best workability, the highest content of organic matter, and the best potential for plants. Material from the surface layer should be stockpiled for use as the final cover.

In an *area sanitary landfill*, solid waste is placed in successive layers on the surface of the soil. The waste is spread, compacted, and covered daily with a thin layer of soil from a source away from the site. A final cover of soil material at least 2 feet thick is placed over the completed landfill. The ratings in [table 20](#) are based on the soil properties that affect trafficability and the risk of pollution. These properties include flooding, permeability, depth to a saturated zone, ponding, slope, and depth to bedrock or a fragipan.

Flooding is a serious problem because it can result in pollution in areas downstream from the landfill. If permeability is too rapid or if fractured bedrock, a fractured fragipan, or a saturated zone is close to the surface, the leachate can contaminate the water supply. Slope is a consideration because of the extra grading required to maintain roads in the steeper areas of the landfill. Also, leachate may flow along the surface of the soils in the steeper areas and cause difficult seepage problems.

*Daily cover for landfill* is the soil material that is used to cover compacted solid waste in an area sanitary landfill. The soil material is obtained offsite, transported to the landfill, and spread over the waste. The ratings in [table 20](#) also apply to the final cover for a landfill. They are based on the soil properties that affect workability, the ease of digging, and the ease of moving and spreading the material over the refuse daily during wet and dry periods. These properties include soil texture, depth to a saturated zone, ponding, rock fragments, slope, depth to bedrock or a fragipan, soil reaction, and content of lime.

Loamy or silty soils that are free of stones and excess gravel are the best cover for a landfill. Clayey soils may be sticky and difficult to spread; sandy soils are subject to wind erosion.

Slope affects the ease of excavation and of moving the cover material. Also, it can influence runoff, erosion, and reclamation of the borrow area.

After soil material has been removed, the soil material remaining in the borrow area must be thick enough over bedrock, a fragipan, or a saturated zone to permit revegetation. The soil material used as the final cover for a landfill should be suitable for plants. It should not have excess lime and should not be too low in pH.

## **Agricultural Waste Management**

Soil properties are important considerations in areas where soils are used as sites for the treatment and disposal of organic waste and wastewater. Selection of soils with properties that favor waste management can help to prevent environmental damage.

Tables 21, 22, and 23 show the degree and kind of soil limitations affecting the treatment of agricultural waste, including municipal and food-processing wastewater and effluent from lagoons or storage ponds. Municipal wastewater is the waste stream from a municipality. It contains domestic waste and may contain industrial waste. It may have received primary or secondary treatment. It is rarely untreated sewage. Food-processing wastewater results from the preparation of fruits, vegetables, milk, cheese, and meats for public consumption. In places it is high in content of sodium and chloride. In the context of these tables, the effluent in lagoons and storage ponds is from facilities used to treat or store food-processing wastewater or domestic or animal waste. Domestic and food-processing wastewater is very dilute, and the effluent from the facilities that treat or store it commonly is very low in content of carbonaceous and nitrogenous material; the content of nitrogen commonly ranges from 10 to 30 milligrams per liter. The wastewater from animal waste treatment lagoons or storage ponds, however, has much higher concentrations of these materials, mainly because the manure has not been diluted as much as the domestic waste. The content of nitrogen in this wastewater generally ranges from 50 to 2,000 milligrams per liter. When wastewater is applied, checks should be made to ensure that nitrogen, heavy metals, and salts are not added in excessive amounts.

The ratings in the tables are for waste management systems that not only dispose of and treat organic waste or wastewater but also are beneficial to crops (application of manure and food-processing waste, application of sewage sludge, and disposal of wastewater by irrigation) and for waste management systems that are designed only for the purpose of wastewater disposal and treatment (overland flow of wastewater, rapid infiltration of wastewater, and slow rate treatment of wastewater).

The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect agricultural waste management. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the tables indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

*Application of manure and food-processing waste* not only disposes of waste material but also can improve crop production by increasing the supply of nutrients in the soils where the material is applied. Manure is the excrement of livestock and poultry, and food-processing waste is damaged fruit and vegetables and the peelings, stems, leaves, pits, and soil particles removed in food preparation. The manure and food-processing waste are either solid, slurry, or liquid. Their nitrogen content varies. A high content of nitrogen limits the application rate. Toxic or otherwise dangerous wastes, such as those mixed with the lye used in food processing, are not considered in the ratings.

The ratings are based on the soil properties that affect absorption, plant growth, microbial activity, erodibility, the rate at which the waste is applied, and the method by which the waste is applied. The properties that affect absorption include permeability, depth to a saturated zone, ponding, the sodium adsorption ratio, depth to bedrock or a fragipan, and available water capacity. The properties that affect plant growth and microbial activity include soil reaction, the sodium adsorption ratio, salinity, and bulk

density. The wind erodibility group, the soil erodibility factor K, and slope are considered in estimating the likelihood that wind erosion or water erosion will transport the waste material from the application site. Stones and cobbles on the soil surface, a saturated zone, ponding, and flooding can hinder the application of waste.

*Application of sewage sludge* not only disposes of waste material but also can improve crop production by increasing the supply of nutrients in the soils where the material is applied. In the context of this table, sewage sludge is the residual product of the treatment of municipal sewage. The solid component consists mainly of cell mass, primarily bacteria cells that developed during secondary treatment and have incorporated soluble organics into their own bodies. The sludge has small amounts of sand, silt, and other solid debris. The content of nitrogen varies. Some sludge has constituents that are toxic to plants or hazardous to the food chain, such as heavy metals and exotic organic compounds, and should be analyzed chemically prior to use.

The content of water in the sludge ranges from about 98 percent to less than 40 percent. The sludge is considered liquid if it is more than about 90 percent water, slurry if it is about 50 to 90 percent water, and solid if it is less than about 50 percent water.

The ratings in the table are based on the soil properties that affect absorption, plant growth, microbial activity, erodibility, the rate at which the sludge is applied, and the method by which the sludge is applied. The properties that affect absorption, plant growth, and microbial activity include permeability, depth to a saturated zone, ponding, the sodium adsorption ratio, depth to bedrock or a fragipan, available water capacity, soil reaction, salinity, and bulk density. The wind erodibility group, the soil erodibility factor K, and slope are considered in estimating the likelihood that wind erosion or water erosion will transport the waste material from the application site. Stones and cobbles on the soil surface, a saturated zone, ponding, and flooding can hinder the application of sludge.

*Disposal of wastewater by irrigation* not only disposes of municipal wastewater and wastewater from food-processing plants, lagoons, and storage ponds but also can improve crop production by increasing the amount of water available to crops. The ratings in the table are based on the soil properties that affect the design, construction, management, and performance of the irrigation system. The properties that affect design and management include the sodium adsorption ratio, depth to a saturated zone, ponding, available water capacity, permeability, slope, and flooding. The properties that affect construction include stones and cobbles on the soil surface, depth to bedrock or a fragipan, depth to a saturated zone, and ponding. The properties that affect performance include depth to bedrock or a fragipan, bulk density, the sodium adsorption ratio, salinity, soil reaction, and the cation-exchange capacity, which is used to estimate the capacity of a soil to adsorb heavy metals.

*Overland flow of wastewater* is a process in which wastewater is applied to the upper reaches of sloped land and allowed to flow across vegetated surfaces, sometimes called terraces, to runoff-collection ditches. The length of the run generally is 150 to 300 feet. The application rate ranges from 2.5 to 16.0 inches per week. It commonly exceeds the rate needed for irrigation of cropland. The wastewater leaves solids and nutrients on the vegetated surfaces as it flows downslope in a thin film. Most of the water reaches the collection ditch, some is lost through evapotranspiration, and a small amount may percolate to the ground water.

The ratings in the table are based on the soil properties that affect absorption, plant growth, microbial activity, and the design and construction of the system. Soil reaction and the cation-exchange capacity affect absorption. Soil reaction, salinity, and the sodium adsorption ratio affect plant growth and microbial activity. Slope, permeability, depth to a saturated zone, ponding, flooding, depth to bedrock or a fragipan, and stones and cobbles on the soil surface affect design and construction.

*Rapid infiltration of wastewater* is a process in which wastewater applied in a level basin at a rate of 4 to 120 inches per week percolates through the soil. The wastewater may eventually reach the ground water. The application rate commonly exceeds the rate needed for irrigation of cropland. Vegetation is not a necessary part of the treatment; hence, the basins may or may not be vegetated. The thickness of the soil material needed for proper treatment of the wastewater is more than 72 inches. As a result, geologic and hydrologic investigation is needed to ensure proper design and performance and to determine the risk of ground-water pollution.

The ratings in the table are based on the soil properties that affect the risk of pollution and the design, construction, and performance of the system. Depth to a saturated zone, ponding, flooding, and depth to bedrock or a fragipan may affect the risk of pollution and the design and construction of the system. Slope and stones and cobbles on the soil surface also affect design and construction. Permeability and soil reaction affect performance.

*Slow rate treatment of wastewater* is a process in which wastewater is applied to land at a rate normally between 0.5 inch and 4.0 inches per week. The application rate commonly exceeds the rate needed for irrigation of cropland. The applied wastewater is treated as it moves through the soil. Much of the treated water may percolate to the ground water, and some enters the atmosphere through evapotranspiration. The applied water generally is not allowed to run off the surface. Waterlogging is prevented either through control of the application rate or through the use of tile drains, or both.

The ratings in the table are based on the soil properties that affect absorption, plant growth, microbial activity, erodibility, and the application of waste. The properties that affect absorption include the sodium adsorption ratio, depth to a saturated zone, ponding, available water capacity, permeability, depth to bedrock or a fragipan, soil reaction, the cation-exchange capacity, and slope. Soil reaction, the sodium adsorption ratio, salinity, and bulk density affect plant growth and microbial activity. The wind erodibility group, the soil erodibility factor K, and slope are considered in estimating the likelihood of wind erosion or water erosion. Stones and cobbles on the soil surface, a saturated zone, ponding, and flooding can hinder the application of waste.

## Construction Materials

Tables 24 and 25 give information about the soils as potential sources of gravel, sand, reclamation material, roadfill, and topsoil (fig 8). Normal compaction, minor processing, and other standard construction practices are assumed.

*Gravel* and *sand* are natural aggregates suitable for commercial use with a minimum of processing. They are used in many kinds of construction. Specifications for each use vary widely. In table 24, only the likelihood of finding material in suitable quantity is evaluated. The suitability of the material for specific purposes is not evaluated, nor are factors that affect excavation of the material. The properties used to evaluate the soil as a source of gravel or sand are gradation of grain sizes (as indicated by the Unified classification of the soil), the thickness of suitable material, and the content of rock fragments. If the bottom layer of the soil contains gravel or sand, the soil is considered a likely source regardless of thickness. The assumption is that the sand or gravel layer below the depth of observation exceeds the minimum thickness.

The soils are rated *good*, *fair*, or *poor* as potential sources of gravel and sand. A rating of *good* or *fair* means that the source material is likely to be in or below the soil. The bottom layer and the thickest layer of the soils are assigned numerical ratings. These ratings indicate the likelihood that the layer is a source of gravel or sand. The number 0.00 indicates that the layer is a poor source. The number 1.00 indicates that





**Figure 8.—Glaciofluvial deposits, also called outwash, are a major source of sand and gravel in Sussex County. This area of Pits, sand and gravel, is located on the North Church delta, a remnant of a glacial lake that was created during the recession of the Wisconsin glacier from the Kittatinny Valley.**

the layer is a good source. A number between 0.00 and 1.00 indicates the degree to which the layer is a likely source.

In [table 25](#), the rating class terms are *good*, *fair*, and *poor*. The features that limit the soils as sources of these materials are specified in the tables. The numerical ratings given after the specified features indicate the degree to which the features limit the soils as sources of reclamation material, roadfill, and topsoil. The lower the number, the greater the limitation.

*Reclamation material* is used in areas that have been drastically disturbed by surface mining or similar activities. When these areas are reclaimed, layers of soil material or unconsolidated geological material, or both, are replaced in a vertical sequence. The reconstructed soil favors plant growth. The ratings in the table do not apply to quarries and other mined areas that require an offsite source of reconstruction material. The ratings are based on the soil properties that affect erosion and stability of the surface and the productive potential of the reconstructed soil. These properties include the content of calcium carbonate; soil reaction; available water capacity; erodibility; texture; content of stones and cobbles; and content of organic matter and other features that affect fertility.

*Roadfill* is soil material that is excavated in one place and used in road embankments in another place. In this table, the soils are rated as a source of roadfill for low embankments, generally less than 6 feet high and less exacting in design than higher embankments.

The ratings are for the whole soil, from the surface to a depth of about 5 feet. It is assumed that soil layers will be mixed when the soil material is excavated and spread.

The ratings are based on the amount of suitable material and on soil properties that affect the ease of excavation and the performance of the material after it is in place. The thickness of the suitable material is a major consideration. The ease of

excavation is affected by the content of stones and cobbles, depth to a saturated zone, and slope. How well the soil performs in place after it has been compacted and drained is determined by its strength (as inferred from the AASHTO classification of the soil) and linear extensibility (shrink-swell potential).

*Topsoil* is used to cover an area so that vegetation can be established and maintained. The upper 40 inches of a soil is evaluated for use as topsoil. Also evaluated is the reclamation potential of the borrow area. The ratings are based on the soil properties that affect plant growth; the ease of excavating, loading, and spreading the material; and reclamation of the borrow area. Toxic substances, soil reaction, and the properties that are inferred from soil texture, such as available water capacity and fertility, affect plant growth. The ease of excavating, loading, and spreading is affected by rock fragments, slope, depth to a saturated zone, soil texture, and thickness of suitable material. Reclamation of the borrow area is affected by slope, depth to a saturated zone, content of rock fragments, depth to bedrock or a fragipan, and toxic material.

The surface layer of most soils is generally preferred for topsoil because of its organic matter content. Organic matter greatly increases the absorption and retention of moisture and nutrients for plant growth.

## Water Management

Table 26 gives information on the soil properties and site features that affect water management. The degree and kind of soil limitations are given for pond reservoir areas; embankments, dikes, and levees; and aquifer-fed excavated ponds. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect these uses. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the table indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

*Pond reservoir areas* hold water behind a dam or embankment. Soils best suited to this use have low seepage potential in the upper 60 inches. The seepage potential is determined by the permeability of the soil and the depth to fractured bedrock or other permeable material. Excessive slope can affect the storage capacity of the reservoir area.

*Embankments, dikes, and levees* are raised structures of soil material, generally less than 20 feet high, constructed to impound water or to protect land against overflow. Embankments that have zoned construction (core and shell) are not considered. In this table, the soils are rated as a source of material for embankment fill. The ratings apply to the soil material below the surface layer to a depth of about 5 feet. It is assumed that soil layers will be uniformly mixed and compacted during construction.

The ratings do not indicate the ability of the natural soil to support an embankment. Soil properties to a depth even greater than the height of the embankment can affect



performance and safety of the embankment. Generally, deeper onsite investigation is needed to determine these properties.

Soil material in embankments must be resistant to seepage, piping, and erosion and have favorable compaction characteristics. Unfavorable features include less than 5 feet of suitable material and a high content of rock fragments or organic matter. A saturated zone affects the amount of usable material. It also affects trafficability.

*Aquifer-fed excavated ponds* are pits or dugouts that extend to a ground-water aquifer or to a depth below a permanent saturated zone. Excluded are ponds that are fed only by surface runoff and embankment ponds that impound water 3 feet or more above the original surface. Excavated ponds are affected by depth to a permanent saturated zone, permeability of the aquifer, and quality of the water. Depth to bedrock and the content of rock fragments affect the ease of excavation.



# Soil Properties

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Data relating to soil properties are collected during the course of the soil survey.

Soil properties are determined by field examination of the soils and by laboratory index testing of some benchmark soils. Established standard procedures are followed. During the survey, many shallow borings are made and examined to identify and classify the soils and to delineate them on the soil maps. Samples are taken from some typical profiles and tested in the laboratory to determine particle-size distribution, plasticity, and compaction characteristics.

Estimates of soil properties are based on field examinations, on laboratory tests of samples from the survey area, and on laboratory tests of samples of similar soils in nearby areas. Tests verify field observations, verify properties that cannot be estimated accurately by field observation, and help to characterize key soils.

The estimates of soil properties are shown in tables. They include engineering properties, physical and chemical properties, and pertinent soil and water features.

## Engineering Properties

[Table 27](#) gives the engineering classifications and the range of engineering properties for the layers of each soil in the survey area.

*Depth* to the upper and lower boundaries of each layer is indicated.

*USDA Texture* is given in the standard terms used by the U.S. Department of Agriculture. These terms are defined according to percentages of sand, silt, and clay in the fraction of the soil that is less than 2 millimeters in diameter. “Loam,” for example, is soil that is 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand. If the content of particles greater than 2 millimeters in diameter is 15 percent or more by volume, an appropriate modifier is added, for example, “gravelly.” Textural terms are defined in the Glossary.

*Classification* of the soils is determined according to the Unified soil classification system (ASTM, 2005) and the system adopted by the American Association of State Highway and Transportation Officials (AASHTO, 2004).

The Unified system classifies soils according to properties that affect their use as construction material. Soils are classified according to particle-size distribution of the fraction less than 3 inches in diameter and according to plasticity index, liquid limit, and organic matter content. Sandy and gravelly soils are identified as GW, GP, GM, GC, SW, SP, SM, and SC; silty and clayey soils as ML, CL, OL, MH, CH, and OH; and highly organic soils as PT. Soils exhibiting engineering properties of two groups can have a dual classification, for example, CL-ML.

The AASHTO system classifies soils according to those properties that affect roadway construction and maintenance. In this system, the fraction of a mineral soil that is less than 3 inches in diameter is classified in one of seven groups from A-1 through A-7 on the basis of particle-size distribution, liquid limit, and plasticity index. Soils in group A-1 are coarse grained and low in content of fines (silt and clay). At the other extreme, soils in group A-7 are fine grained. Highly organic soils are classified in group A-8 on the basis of visual inspection.

If laboratory data are available, the A-1, A-2, and A-7 groups are further classified as A-1-a, A-1-b, A-2-4, A-2-5, A-2-6, A-2-7, A-7-5, or A-7-6. As an additional

refinement, the suitability of a soil as subgrade material can be indicated by a group index number. Group index numbers range from 0 for the best subgrade material to 20 or higher for the poorest. The AASHTO classification for soils tested, with group index numbers in parentheses, is given in table 27.

*Fragments* greater than 10 inches in diameter and 3 to 10 inches in diameter are indicated as a percentage of the total soil on a dry-weight basis. The percentages are estimates determined mainly by converting volume percentage in the field to weight percentage.

*Percentage passing sieve number* is the percentage of the soil fraction less than 3 inches in diameter based on an oven-dry weight. The sieves, numbers 4, 10, 40, and 200 (USA Standard Series), have openings of 4.76, 2.00, 0.420, and 0.074 millimeters, respectively. Estimates are based on laboratory tests of soils sampled in the survey area and in nearby areas and on estimates made in the field.

*Liquid limit* and *plasticity index* (Atterberg limits) indicate the plasticity characteristics of a soil. The estimates are based on test data from the survey area or from nearby areas and on field examination.

## Physical Soil Properties

Table 28 shows estimates of some physical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

*Depth* to the upper and lower boundaries of each layer is indicated.

Particle size is the effective diameter of a soil particle as measured by sedimentation, sieving, or micrometric methods. Particle sizes are expressed as classes with specific effective diameter class limits. The broad classes are sand, silt, and clay, ranging from the larger to the smaller.

*Sand* as a soil separate consists of mineral soil particles that are 0.05 millimeter to 2 millimeters in diameter. In table 28, the estimated sand content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

*Silt* as a soil separate consists of mineral soil particles that are 0.002 to 0.05 millimeter in diameter. In table 28, the estimated silt content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

*Clay* as a soil separate consists of mineral soil particles that are less than 0.002 millimeter in diameter. In table 28, the estimated clay content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of sand, silt, and clay affects the physical behavior of a soil. Particle size is important for engineering and agronomic interpretations, for determination of soil hydrologic qualities, and for soil classification.

The amount and kind of clay affect the fertility and physical condition of the soil and the ability of the soil to adsorb cations and to retain moisture. They influence shrink-swell potential, permeability, plasticity, the ease of soil dispersion, and other soil properties. The amount and kind of clay in a soil also affect tillage and earthmoving operations.

*Moist bulk density* is the weight of soil (oven-dry) per unit volume. Volume is measured when the soil is at field moisture capacity, that is, the moisture content at  $1/3$ - or  $1/10$ -bar (33kPa or 10kPa) moisture tension. Weight is determined after the soil is dried at 105 degrees C. In table 28, the estimated moist bulk density of each soil horizon is expressed in grams per cubic centimeter of soil material that is less than 2 millimeters in diameter. Bulk density data are used to compute linear extensibility,

shrink-swell potential, available water capacity, total pore space, and other soil properties. The moist bulk density of a soil indicates the pore space available for water and roots. Depending on soil texture, a bulk density of more than 1.4 can restrict water storage and root penetration. Moist bulk density is influenced by texture, kind of clay, content of organic matter, and soil structure.

*Saturated hydraulic conductivity* refers to the ability of a soil to transmit water or air. The term “permeability,” as used in soil surveys, indicates saturated hydraulic conductivity ( $K_{sat}$ ). The estimates in [table 28](#) indicate the rate of water movement, in micrometers per second, when the soil is saturated. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Permeability is considered in the design of soil drainage systems and individual subsurface sewage disposal fields.

*Available water capacity* refers to the quantity of water that the soil is capable of storing for use by plants. The capacity for water storage is given in inches of water per inch of soil for each soil layer. The capacity varies, depending on soil properties that affect retention of water. The most important properties are the content of organic matter, soil texture, bulk density, and soil structure. Available water capacity is an important factor in the choice of plants or crops to be grown and in the design and management of irrigation systems. Available water capacity is not an estimate of the quantity of water actually available to plants at any given time.

*Linear extensibility* refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. It is an expression of the volume change between the water content of the clod at  $1/3$ - or  $1/10$ -bar tension (33kPa or 10kPa tension) and oven dryness. The volume change is reported in [table 28](#) as percent change for the whole soil. Volume change is influenced by the amount and type of clay minerals in the soil.

Linear extensibility is used to determine the shrink-swell potential of soils. The shrink-swell potential is low if the soil has a linear extensibility of less than 3 percent; moderate if 3 to 6 percent; high if 6 to 9 percent; and very high if more than 9 percent. If the linear extensibility is more than 3, shrinking and swelling can cause damage to buildings, roads, and other structures and to plant roots. Special design commonly is needed.

*Organic matter* is the plant and animal residue in the soil at various stages of decomposition. In [table 28](#), the estimated content of organic matter is expressed as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of organic matter in a soil can be maintained by returning crop residue to the soil. Organic matter has a positive effect on available water capacity, water infiltration, soil organism activity, and tilth. It is a source of nitrogen and other nutrients for crops and soil organisms.

*Erosion factors* are shown in [table 28](#) as the K factor ( $K_w$  and  $K_f$ ) and the T factor. Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter and on soil structure and permeability. Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

*Erosion factor  $K_w$*  indicates the erodibility of the whole soil. The estimates are modified by the presence of rock fragments.

*Erosion factor  $K_f$*  indicates the erodibility of the fine-earth fraction, or the material less than 2 millimeters in size.

*Erosion factor T* is an estimate of the maximum average annual rate of soil erosion by wind or water that can occur without affecting crop productivity over a sustained period. The rate is in tons per acre per year.

*Wind erodibility groups* are made up of soils that have similar properties affecting their susceptibility to wind erosion in cultivated areas. The soils assigned to group 1 are the most susceptible to wind erosion, and those assigned to group 8 are the least susceptible. The groups are described in the “National Soil Survey Handbook,” which is available in local offices of the Natural Resources Conservation Service or on the Internet.

*Wind erodibility index* is a numerical value indicating the susceptibility of soil to wind erosion, or the tons per acre per year that can be expected to be lost to wind erosion. There is a close correlation between wind erosion and the texture of the surface layer, the size and durability of surface clods, rock fragments, organic matter, and a calcareous reaction. Soil moisture and frozen soil layers also influence wind erosion.

## Chemical Soil Properties

**Table 29** shows estimates of some chemical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

*Depth* to the upper and lower boundaries of each layer is indicated.

*Cation-exchange capacity* is the total amount of extractable bases that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. Soils having a low cation-exchange capacity hold fewer cations and may require more frequent applications of fertilizer than soils having a high cation-exchange capacity. The ability to retain cations reduces the hazard of ground-water pollution.

*Effective cation-exchange capacity* refers to the sum of extractable bases plus aluminum expressed in terms of milliequivalents per 100 grams of soil. It is determined for soils that have pH of less than 5.5.

*Soil reaction* is a measure of acidity or alkalinity. The pH of each soil horizon is based on many field tests. For many soils, values have been verified by laboratory analyses. Soil reaction is important in selecting crops and other plants, in evaluating soil amendments for fertility and stabilization, and in determining the risk of corrosion.

*Calcium carbonate* equivalent is the percent of carbonates, by weight, in the fraction of the soil less than 2 millimeters in size. The availability of plant nutrients is influenced by the amount of carbonates in the soil. Incorporating nitrogen fertilizer into calcareous soils helps to prevent nitrite accumulation and ammonium-N volatilization.

*Gypsum* is expressed as a percent, by weight, of hydrated calcium sulfates in the fraction of the soil less than 20 millimeters in size. Gypsum is partially soluble in water. Soils that have a high content of gypsum may collapse if the gypsum is removed by percolating water.

*Salinity* is a measure of soluble salts in the soil at saturation. It is expressed as the electrical conductivity of the saturation extract, in millimhos per centimeter at 25 degrees C. Estimates are based on field and laboratory measurements at representative sites of nonirrigated soils. The salinity of irrigated soils is affected by the quality of the irrigation water and by the frequency of water application. Hence, the salinity of soils in individual fields can differ greatly from the value given in the table. Salinity affects the suitability of a soil for crop production, the stability of soil if used as construction material, and the potential of the soil to corrode metal and concrete.

*Sodium adsorption ratio (SAR)* is a measure of the amount of sodium (Na) relative to calcium (Ca) and magnesium (Mg) in the water extract from saturated soil paste. It is the ratio of the Na concentration divided by the square root of one-half of the Ca +



Mg concentration. Soils that have SAR values of 13 or more may be characterized by an increased dispersion of organic matter and clay particles, reduced permeability and aeration, and a general degradation of soil structure.

## Soil Features

[Table 30](#) gives estimates of various soil features. The estimates are used in land use planning that involves engineering considerations.

A *restrictive layer* is a nearly continuous layer that has one or more physical, chemical, or thermal properties that significantly impede the movement of water and air through the soil or that restrict roots or otherwise provide an unfavorable root environment. Examples are bedrock, strongly contrasting textural stratification, and fragipans ([fig 9](#)). The table indicates the hardness and thickness of the restrictive layer, both of which significantly affect the ease of excavation. *Depth to top* is the vertical distance from the soil surface to the upper boundary of the restrictive layer.

*Subsidence* is the settlement of organic soils or of saturated mineral soils of very low density. Subsidence generally results from either desiccation and shrinkage or oxidation of organic material, or both, following drainage. Subsidence takes place gradually, usually over a period of several years. The table shows the expected initial subsidence, which usually is a result of drainage, and total subsidence, which results from a combination of factors.

*Potential for frost action* is the likelihood of upward or lateral expansion of the soil caused by the formation of segregated ice lenses (frost heave) and the subsequent collapse of the soil and loss of strength on thawing. Frost action occurs when moisture moves into the freezing zone of the soil. Temperature, texture, density, permeability, content of organic matter, and depth to the water table are the most important factors considered in evaluating the potential for frost action. It is assumed



**Figure 9.—Bedrock, exposed at or lying just beneath the ground surface, poses use and management concerns in all parts of Sussex County. This is an example of a granitic-gneiss rock outcrop in an area of Chatfield-Hollis-Rock outcrop, 0 to 15 percent slopes, located in the Highlands.**

that the soil is not insulated by vegetation or snow and is not artificially drained. Silty and highly structured, clayey soils that have a high water table in winter are the most susceptible to frost action. Well drained, very gravelly, or very sandy soils are the least susceptible. Frost heave and low soil strength during thawing cause damage to pavements and other rigid structures.

*Risk of corrosion* pertains to potential soil-induced electrochemical or chemical action that corrodes or weakens uncoated steel or concrete. The rate of corrosion of uncoated steel is related to such factors as soil moisture, particle-size distribution, acidity, and electrical conductivity of the soil. The rate of corrosion of concrete is based mainly on the texture, moisture content, and acidity of the soil. Special site examination and design may be needed if the combination of factors results in a severe hazard of corrosion. The steel or concrete in installations that intersect soil boundaries or soil layers is more susceptible to corrosion than the steel or concrete in installations that are entirely within one kind of soil or within one soil layer.

For uncoated steel, the risk of corrosion, expressed as *low*, *moderate*, or *high*, is based on soil drainage class, total acidity, electrical resistivity near field capacity, and electrical conductivity of the saturation extract.

For concrete, the risk of corrosion also is expressed as *low*, *moderate*, or *high*. It is based on soil texture and acidity.

## Water Features

**Table 31** gives estimates of various water features. The estimates are used in land use planning that involves engineering considerations.

*Hydrologic groups* are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The four hydrologic groups are:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas.

*Surface runoff* refers to the loss of water from an area by flow over the land surface. Surface runoff classes are based on slope, climate, and vegetative cover. It is assumed that the surface of the soil is bare and that the retention of surface water resulting from irregularities in the ground surface is minimal. The classes are negligible, very low, low, medium, high, and very high.

The *months* in the table indicate the portion of the year in which the feature is most likely to be a concern.



*Water table* refers to a saturated zone in the soil. Table 31 indicates, by month, depth to the top (*upper limit*) and base (*lower limit*) of the saturated zone in most years. Estimates of the upper and lower limits are based mainly on observations of the water table at selected sites and on evidence of a saturated zone, namely grayish colors or mottles (redoximorphic features) in the soil. A saturated zone that lasts for less than a month is not considered a water table.

*Ponding* is standing water in a closed depression. Unless a drainage system is installed, the water is removed only by percolation, transpiration, or evaporation. Table 31 indicates *surface water depth* and the *duration* and *frequency* of ponding. Duration is expressed as *very brief* if less than 2 days, *brief* if 2 to 7 days, *long* if 7 to 30 days, and *very long* if more than 30 days. Frequency is expressed as none, rare, occasional, and frequent. *None* means that ponding is not probable; *rare* that it is unlikely but possible under unusual weather conditions (the chance of ponding is nearly 0 percent to 5 percent in any year); *occasional* that it occurs, on the average, once or less in 2 years (the chance of ponding is 5 to 50 percent in any year); and *frequent* that it occurs, on the average, more than once in 2 years (the chance of ponding is more than 50 percent in any year).

*Flooding* is the temporary inundation of an area caused by overflowing streams, by runoff from adjacent slopes, or by tides. Water standing for short periods after rainfall or snowmelt is not considered flooding, and water standing in swamps and marshes is considered ponding rather than flooding.

*Duration and frequency* are estimated. Duration is expressed as *extremely brief* if 0.1 hour to 4 hours, *very brief* if 4 hours to 2 days, *brief* if 2 to 7 days, *long* if 7 to 30 days, and *very long* if more than 30 days. Frequency is expressed as none, very rare, rare, occasional, frequent, and very frequent. *None* means that flooding is not probable; *very rare* that it is very unlikely but possible under extremely unusual weather conditions (the chance of flooding is less than 1 percent in any year); *rare* that it is unlikely but possible under unusual weather conditions (the chance of flooding is 1 to 5 percent in any year); *occasional* that it occurs infrequently under normal weather conditions (the chance of flooding is 5 to 50 percent in any year); *frequent* that it is likely to occur often under normal weather conditions (the chance of flooding is more than 50 percent in any year but is less than 50 percent in all months in any year); and *very frequent* that it is likely to occur very often under normal weather conditions (the chance of flooding is more than 50 percent in all months of any year).

The information is based on evidence in the soil profile, namely thin strata of gravel, sand, silt, or clay deposited by floodwater; irregular decrease in organic matter content with increasing depth; and little or no horizon development.

Also considered are local information about the extent and levels of flooding and the relation of each soil on the landscape to historic floods. Information on the extent of flooding based on soil data is less specific than that provided by detailed engineering surveys that delineate flood-prone areas at specific flood frequency levels.



# Classification of the Soils

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The system of soil classification used by the National Cooperative Soil Survey has six categories (Soil Survey Staff, 1999 and 2003). Beginning with the broadest, these categories are the order, suborder, great group, subgroup, family, and series. Classification is based on soil properties observed in the field or inferred from those observations or from laboratory measurements. The categories are defined in the following paragraphs.

**ORDER.** Twelve soil orders are recognized. The differences among orders reflect the dominant soil-forming processes and the degree of soil formation. Each order is identified by a word ending in *sol*. An example is Inceptisol.

**SUBORDER.** Each order is divided into suborders primarily on the basis of properties that influence soil genesis and are important to plant growth or properties that reflect the most important variables within the orders. The last syllable in the name of a suborder indicates the order. An example is Udepts(*Ud*, meaning humid, plus *ept*, from Inceptisol).

**GREAT GROUP.** Each suborder is divided into great groups on the basis of close similarities in kind, arrangement, and degree of development of pedogenic horizons; soil moisture and temperature regimes; type of saturation; and base status. Each great group is identified by the name of a suborder and by a prefix that indicates a property of the soil. An example is Fragiudepts ( *Fragi*, meaning fragipan, plus *udept*, the suborder of the Inceptisols that has a udic moisture regime).

**SUBGROUP.** Each great group has a typic subgroup. Other subgroups are intergrades or extragrades. The typic subgroup is the central concept of the great group; it is not necessarily the most extensive. Intergrades are transitions to other orders, suborders, or great groups. Extragrades have some properties that are not representative of the great group but do not indicate transitions to any other taxonomic class. Each subgroup is identified by one or more adjectives preceding the name of the great group. The adjective *Typic* identifies the subgroup that typifies the great group. An example is Typic Fragiudepts.

**FAMILY.** Families are established within a subgroup on the basis of physical and chemical properties and other characteristics that affect management. Generally, the properties are those of horizons below plow depth where there is much biological activity. Among the properties and characteristics considered are particle-size class, mineralogy class, cation-exchange activity class, soil temperature regime, soil depth, and reaction class. A family name consists of the name of a subgroup preceded by terms that indicate soil properties. An example is coarse-loamy, mixed, active, mesic Typic Fragiudepts.

**SERIES.** The series consists of soils within a family that have horizons similar in color, texture, structure, reaction, consistence, mineral and chemical composition, and arrangement in the profile.

[Table 32](#) indicates the order, suborder, great group, subgroup, and family of the soil series in the survey area.

## Soil Series and Their Morphology

In this section, each soil series recognized in the survey area is described. Characteristics of the soil and the material in which it formed are identified for each

series. A pedon, a small three-dimensional area of soil, that is typical of the series in the survey area is described. The detailed description of each soil horizon follows standards in the "Soil Survey Manual" (Soil Survey Division Staff, 1993) and in the "Field Book for Describing and Sampling Soils" (Schoeneberger and others, 2002). Many of the technical terms used in the descriptions are defined in "Soil Taxonomy" (Soil Survey Staff, 1999) and in "Keys to Soil Taxonomy" (Soil Survey Staff, 2003). Unless otherwise indicated, colors in the descriptions are for moist soil. Following the pedon description is the range of important characteristics of the soils in the series.

## Alden Series

*Depth class:* very deep

*Drainage class:* very poorly drained

*Permeability:* moderate in the surface layer, moderately slow in the subsoil, moderately slow or slow in the substratum

*Parent material:* silty colluvium derived from sandstone over fine-loamy till derived from sandstone

*Landscape:* till plains

*Landform:* depressions

*Associated soils:* Chippewa, Hibernia

*Slope range:* 0 to 8 percent

**Taxonomic class:** Fine-loamy, mixed, active, nonacid, mesic Mollic Endoaquepts

### Typical Pedon

AhbBc—Alden silt loam, 0 to 8 percent slopes, extremely stony; Montague Township, Sussex County, High Point State Park, 7,920 feet north of the intersection of Sawmill Road and Deckertown Turnpike, 108 feet west of Sawmill Road, in a marsh; USGS Port Jervis South, NJ-NY-PA topographic quadrangle; lat. 41 degrees 16 minutes 48 seconds N. and long. 74 degrees 41 minutes 43 seconds W. NAD83.

Oi—0 to 2 inches; black (10YR 2/1) slightly decomposed herbaceous plant material.

A—2 to 7 inches; black (10YR 2/1) silt loam (10YR 5/1, dry); moderate fine granular structure; very friable; many medium and few fine roots; very strongly acid (pH—5.0); gradual wavy boundary.

Bg1—7 to 14 inches; gray (2.5Y 5/1) silt loam (10YR 7/1, dry); moderate medium and fine subangular blocky structure; friable; many medium and common fine roots; 5 percent subrounded red and gray sandstone medium gravel; many coarse prominent yellowish brown (10YR 5/6) iron accumulations with clear boundaries in the matrix; strongly acid (pH—5.2); clear wavy boundary.

Bg2—14 to 28 inches; gray (10YR 5/1) silty clay loam; weak medium and fine subangular blocky structure; friable; few medium roots; 5 percent subrounded red and gray sandstone medium gravel; many common prominent dark yellowish brown (10YR 4/6) iron accumulations with clear boundaries in the matrix; moderately acid (pH—6.0); clear wavy boundary.

Bg3—28 to 43 inches; gray (2.5Y 5/1) loam; weak coarse and moderate fine subangular blocky structure; firm; few medium roots; 10 percent subrounded red and gray sandstone coarse gravel; many coarse prominent dark yellowish brown (10YR 4/6) iron accumulations with clear boundaries in the matrix; neutral (pH—7.0); clear wavy boundary.

C—43 to 60 inches; gray (5Y 5/1) silt loam; massive; friable; 10 percent subrounded red and gray sandstone coarse gravel; many coarse prominent dark yellowish brown (10YR 4/6) and common medium prominent yellowish brown (10YR 5/6) iron accumulations with clear boundaries in the matrix; slightly alkaline (pH—7.6).

### Range in Characteristics

*Thickness of solum:* 19 to 48 inches

*Depth to bedrock:* greater than 60 inches

*Depth to free carbonates:* greater than 40 inches

*Rock fragments:* 0 to 15 percent by volume in the A and Bg horizons, 5 to 35 percent by volume in the C horizon

*Reaction:* very strongly acid to neutral in the A horizon, strongly acid to neutral in the Bg horizon, slightly acid to slightly alkaline in the C horizon to a depth of 40 inches, slightly acid to moderately alkaline in the C horizon below 40 inches where unlimed

*O horizon, where present:*

Color—black

Texture—slightly decomposed herbaceous or woody plant material

*A horizon:*

Color—hue of 10YR to 2.5Y, value of 2 or 3, and chroma of 0 to 2

Texture—silt loam in the fine earth fraction

*Bg horizon:*

Color—hue of 5YR to 5Y or 5GY or neutral, value of 4 to 6, and chroma of 0 to 2

Texture—very fine sandy loam, loam, silt loam, or silty clay loam in the fine earth fraction

*C horizons:*

Color—hue of 5YR to 5Y, value of 3 to 6, and chroma of 0 to 3

Texture—fine sandy loam, loam, silt loam, or silty clay loam in the fine earth fraction

## Arnot Series

*Depth class:* shallow

*Drainage class:* somewhat excessively drained

*Permeability:* moderate

*Parent material:* loamy till derived from conglomerate

*Landscape:* mountains

*Landform:* ground moraines

*Associated soils:* Lordstown, Rock outcrop, Rubble land

*Slope range:* 0 to 80 percent

**Taxonomic class:** Loamy-skeletal, mixed, active, mesic Lithic Dystrudepts

### Typical Pedon

ArvE—Arnot-Lordstown-Rock outcrop complex, 35 to 60 percent slopes; Sandyston Township, Sussex County, Stokes State Forest, 4,200 feet northeast of intersection of Route 636 and Sunrise Mountain Road, 1,650 feet southeast of Sunrise Mountain Road, in a wooded area on the shoulder of Kittatinny Mountain; USGS Culvers Gap, NJ topographic quadrangle; lat. 41 degrees 11 minutes 01 seconds N. and long. 74 degrees 46 minutes 37 seconds W. NAD83.

Oi—0 to 1 inch; black (10YR 2/1) slightly decomposed woody plant material.

A—1 to 2 inches; black (10YR 2/1) loam (10YR 4/1, dry); weak fine granular structure; very friable; many fine and few coarse roots; very strongly acid (pH—4.8); abrupt wavy boundary.

E—2 to 3 inches; dark gray (10YR 4/1) fine sandy loam; weak fine granular structure; friable; many fine and few coarse roots; very strongly acid (pH—4.8); abrupt wavy boundary.

Bhs—3 to 4 inches; dark brown (7.5YR 3/2) fine sandy loam; moderate medium subangular blocky structure; friable; many fine and few coarse roots; very strongly acid (pH—5.0); abrupt wavy boundary.

Bw1—4 to 12 inches; yellowish brown (10YR 5/6) very gravelly loam; weak fine subangular blocky structure; friable; common fine and few coarse roots; 20 percent subrounded red and gray sandstone and quartzite coarse gravel; 20 percent subrounded red and gray sandstone and quartzite medium gravel; very strongly acid (pH—5.0); clear wavy boundary.

Bw2—12 to 17 inches; dark yellowish brown (10YR 4/6) extremely gravelly loam; weak fine subangular blocky structure; friable; few fine roots; 40 percent subrounded red and gray sandstone and quartzite medium gravel; 20 percent subrounded red and gray sandstone and quartzite coarse gravel; very strongly acid (pH—5.0); abrupt wavy boundary.

2R—17 inches; hard gray sandstone and quartzite bedrock.

### Range in Characteristics

*Thickness of solum:* 10 to 20 inches

*Depth to bedrock:* 10 to 20 inches

*Rock fragments:* 35 to 70 percent by volume

*Reaction:* extremely acid through moderately acid where unlimed

*O horizon, where present:*

Color—black

Texture—slightly decomposed woody plant material

*A horizon:*

Color—hue of 5YR to 2.5Y or neutral, value of 2 to 4, and chroma of 0 to 3

Texture—loam in the fine earth fraction

*E horizon:*

Color—hue of 7.5YR or 10YR, value of 4 to 6, and chroma of 1 to 3

Texture—fine sandy loam in the fine earth fraction

*Bhs horizon:*

Color—hue of 5YR to 10YR, value of 3, and chroma of 2 or 3

Texture—fine sandy loam in the fine earth fraction

*Bw horizon:*

Color—hue of 2.5YR to 2.5Y, value of 4 to 6, and chroma of 3 to 6

Texture—loam or silt loam in the fine earth fraction

*2R horizon:*

Hard gray or red sandstone, quartzite, or conglomerate bedrock

## Atherton Taxadjunct

*Depth class:* very deep

*Drainage class:* very poorly drained

*Permeability:* moderate or moderately slow in the surface layer and subsoil, moderate or moderately rapid in the substratum

*Parent material:* post glacial fine-silty alluvium

*Landscape:* river valleys

*Landform:* depressions

*Associated soils:* Aeris Endoaquepts; Atherton, poorly drained

*Slope range:* 0 to 3 percent

**Taxonomic class:** Fine-silty, mixed, active, nonacid, mesic Aeris Endoaquepts

### Typical Pedon

AtcA—Atherton mucky silt loam, 0 to 3 percent slopes; Montague Township, Sussex County, Delaware Water Gap National Recreation Area, 6,336 feet northeast of the US Route 206 bridge, 1,850 feet west of County Route 521, 1,320 feet south of field entrance road, in an abandoned pasture; USGS Milford, PA-NJ topographic quadrangle; lat. 41 degrees 19 minutes 03.31 seconds N and long. 74 degrees 46 minutes 56.47 seconds W. NAD27.

Oi—0 to 2 inches; black (10YR 2/1) slightly decomposed herbaceous plant material.

Oe—2 to 4 inches; black (10YR 2/1) moderately decomposed herbaceous plant material.

A—4 to 8 inches; very dark grayish brown (10YR 3/2) mucky silt loam; moderate fine granular structure; friable; many medium and fine roots; moderately acid (pH—5.9); clear wavy boundary.

Bg1—8 to 10 inches; dark gray (10YR 4/1) silt loam; moderate fine granular structure; friable; many medium and fine roots; slightly acid (pH—6.3); clear wavy boundary.

Bg2—10 to 18 inches; dark gray (10YR 4/1) silt loam; moderate medium subangular blocky structure parting to moderate fine granular; friable; many fine and common medium roots; slightly acid (pH—6.2); clear wavy boundary.

Bg3—18 to 29 inches; olive gray (5Y 5/2) silt loam; massive; firm; few medium roots; few fine prominent brown (7.5YR 5/2) iron depletions with clear boundaries in the matrix; common medium prominent dark yellowish brown (10YR 3/6) iron accumulations with clear boundaries in the matrix; slightly acid (pH—6.2); gradual wavy boundary.

BC1—29 to 32 inches; brown (7.5YR 5/3) silt loam; massive; firm; common medium prominent olive gray (5Y 5/2) iron depletions with clear boundaries in the matrix; few fine distinct strong brown (7.5YR 4/6) iron accumulations with clear boundaries in the matrix; few fine prominent black (10YR 2/1) manganese accumulations with sharp boundaries in the matrix; moderately acid (pH—6.0); gradual wavy boundary.

BC2—32 to 41 inches; brown (7.5YR 5/4) silt loam; massive; firm; many medium prominent reddish gray (5YR 5/2) and few medium prominent greenish gray (5GY 5/1) iron depletions with clear boundaries in the matrix; common medium prominent yellowish red (5YR 5/6) iron accumulations with clear boundaries in the matrix; moderately acid (pH—6.0); gradual wavy boundary.

C1—41 to 45 inches; yellowish brown (10YR 5/4) fine sandy loam; massive; firm; common medium prominent brown (7.5YR 5/2) iron depletions with clear boundaries in the matrix; few medium prominent brown (7.5YR 5/4) iron accumulations with clear boundaries in the matrix; moderately acid (pH—6.0); clear wavy boundary.

C2—45 to 50 inches; brown (7.5YR 4/3) loam; massive; firm; many medium distinct gray (7.5YR 5/1) iron depletions with clear boundaries in the matrix; moderately acid (pH—6.0); clear wavy boundary.

C3—50 to 60 inches; brown (7.5YR 4/2) very fine sandy loam; massive; firm; many coarse distinct dark yellowish brown (10YR 4/6) iron accumulations with clear boundaries in the matrix; moderately acid (pH—6.0); clear wavy boundary.

C4—60 to 70 inches; brown (7.5YR 4/2) fine sandy loam; massive; friable; many coarse prominent dark brown (7.5YR 3/4) and many coarse distinct dark yellowish brown (10YR 4/6) iron accumulations with clear boundaries in the matrix; moderately acid (pH—6.0).

### Range in Characteristics

*Thickness of solum:* 22 to 44 inches

*Depth to bedrock:* greater than 70 inches

*Coarse fragments:* 0 to 15 percent by volume

*Reaction:* strongly acid to neutral in the A horizon; unless limed, moderately acid to slightly alkaline in the Bg, BC, and C horizons

*O horizon, where present:*

Color—black or dark brown

Texture—slightly to highly decomposed organic material

*A horizon:*

Color—hue of 7.5YR to 2.5Y, value of 2 to 4, and chroma of 0 to 2

Texture—silt loam in the fine earth fraction

*Bg horizon:*

Color—hue of 7.5YR to 5Y, value of 4 to 6, and chroma of 1 to 4

Texture—silty clay loam, silt loam, loam, very fine sandy loam or fine sandy loam in the fine earth fraction

Redoximorphic features—iron depletions in shades of gray and iron concentrations in shades of brown

*BC horizon:*

Color—hue of 7.5YR to 5Y, value of 4 to 6, and chroma of 1 to 4

Texture—silty clay loam, silt loam, loam, very fine sandy loam or fine sandy loam in the fine earth fraction

Redoximorphic features—iron depletions in shades of gray and iron concentrations in shades of brown

*C horizon:*

Color—hue of 7.5YR to 5Y, value of 4 to 6, and chroma of 1 to 4

Texture—silty clay loam, silt loam, loam, very fine sandy loam or fine sandy loam in the fine earth fraction

Redoximorphic features—iron depletions in shades of gray and iron concentrations in shades of brown

**Note:** Atherton is being mapped as a taxadjunct to the Atherton series, as the particle-size family of this soil is fine-silty rather than fine-loamy, which is the typical particle-size family of the Atherton series. Ranges for colors and textures differ from the typical ranges for the Atherton series.

A poorly drained phase of Atherton is recognized in the map unit AtcA—Atherton mucky silt loam, 0 to 3 percent slopes.

## Catden Series

*Depth class:* very deep

*Drainage class:* very poorly drained

*Permeability:* moderately slow to moderately rapid

*Parent material:* woody and herbaceous organic material

*Landscape:* till plains

*Landform:* depressions

*Associated soils:* Alden, Walkill

*Slope range:* 0 to 2 percent

**Taxonomic class:** Euic, mesic Typic Haplosaprists

### Typical Pedon

CatbA—Catden mucky peat, 0 to 2 percent slopes; Hampton Township, Sussex County, Bear Swamp Wildlife Management Area, 9,600 feet west of intersection of



Route 633 and Route 521; 1,300 feet north of parking lot off Route 521, in a forested wetland; USGS Culvers Gap, NJ topographic quadrangle; lat. 41 degrees 07 minutes 46 seconds N. and long. 74 degrees 49 minutes 26 seconds W. NAD83.

Oe—0 to 2 inches; very dark brown (10YR 2/2) broken face and rubbed mucky peat; 45 percent fibers, 20 percent rubbed fibers; moderate coarse platy parting to moderate fine granular structure; friable; many fine, common medium, and few coarse roots; 10 percent woody fragments; very strongly acid (pH—4.8); abrupt smooth boundary.

Oa1—2 to 13 inches; black (10YR 2/1) broken face and rubbed muck; 10 percent fibers, less than 5 percent rubbed fibers; moderate medium and weak coarse granular structure; friable; many fine and few medium and coarse roots; very strongly acid (pH—5.0); clear wavy boundary.

Oa2—13 to 20 inches; very dark brown (10YR 2/2) broken face and rubbed woody muck; 30 percent fibers, 5 percent rubbed fibers; weak coarse and medium subangular blocky structure; friable; many fine roots; 20 percent woody fragments; very strongly acid (pH—5.0); clear wavy boundary.

Oa3—20 to 32 inches; black (N 2.5/0) broken face and rubbed muck; 10 percent fibers, less than 5 percent rubbed fibers; massive; firm; 10 percent woody fragments; strongly acid (pH—5.4); clear smooth boundary.

Oa4—32 to 60 inches; very dark brown (7.5YR 2.5/2) broken face and rubbed muck; 45 percent fibers, 15 percent rubbed fibers; massive; firm; 10 percent woody fragments; moderately acid (pH—5.6).

### Range in Characteristics

*Woody fragments:* 0 to 30 percent by volume

*Reaction:* very strongly acid to neutral where unlimed

*Surface tier:*

Color—hue of 5YR to 10YR or neutral, value of 1 or 2, and chroma of 0 to 2

Texture—mucky peat

*Subsurface tier:*

Color—hue of 5YR to 10YR or neutral, value of 2 or 3, and chroma of 0 to 4

Texture—muck

*Bottom tier:*

Color—hue of 5YR to 10YR or neutral, value of 2 or 3, and chroma of 0 to 4

Texture—muck

## Chatfield Series

*Depth class:* moderately deep

*Drainage class:* well drained

*Permeability:* moderate or moderately rapid

*Parent material:* coarse-loamy till derived from granite and gneiss

*Landscape:* mountains

*Landform:* ground moraines

*Associated soils:* Hollis; Rock outcrop; Rockaway; Urban land

*Slope range:* 0 to 60 percent

**Taxonomic class:** Coarse-loamy, mixed, superactive, mesic Typic Dystrudepts

### Typical Pedon

ChkC—Chatfield-Hollis-Rock outcrop complex, 0 to 15 percent slopes; Byram Township, Sussex County, Allamuchy Mountain State Park, 4,800 feet north of Route

604, in a wooded area; USGS Tranquility topographic quadrangle; lat. 40 degrees 55 minutes 54.15 seconds north and long. 74 degrees 45 minutes 16.39 seconds W NAD83.

Oi—0 to 1 inch; black (10YR 2/1) partially decomposed organic material.

Oa—1 to 3 inches; black (10YR 2/1) highly decomposed organic material.

A—3 to 5 inches; dark brown (10YR 3/3) cobbly loam; moderate fine granular structure; friable; many fine and medium roots; 8 percent subrounded granitic gneiss cobbles; 7 percent subrounded granitic gneiss coarse gravel; 1 percent subrounded granitic gneiss stones; very strongly acid (pH—5.0); clear smooth boundary.

Bw1—5 to 10 inches; dark yellowish brown (10YR 3/6) cobbly loam; weak medium subangular blocky structure parting to moderate fine subangular blocky structure; friable; many fine and common medium roots; 8 percent subrounded granitic gneiss cobbles; 7 percent subrounded granitic gneiss coarse gravel; 1 percent subrounded granitic gneiss stones; very strongly acid (pH—5.0); gradual wavy boundary.

Bw2—10 to 24 inches; dark yellowish brown (10YR 4/6) cobbly sandy loam; moderate medium subangular blocky structure; friable; common fine and medium roots; 12 percent subrounded granitic gneiss cobbles; 8 percent subrounded granitic gneiss coarse gravel; 1 percent subrounded granitic gneiss stones; strongly acid (pH—5.3); clear wavy boundary.

BC—24 to 30 inches; olive brown (2.5Y 4/4) cobbly sandy loam; weak medium subangular blocky structure; friable; common fine and medium roots; 15 percent subrounded subrounded granitic gneiss coarse gravel; 12 percent subrounded granitic gneiss cobbles; 1 percent subrounded granitic gneiss stones; very strongly acid (pH—5.0); clear wavy boundary.

2R—30 inches; hard granitic gneiss bedrock.

### Range in Characteristics

*Thickness of solum:* 16 to 36 inches

*Depth to bedrock:* 20 to 40 inches

*Rock fragments:* 5 to 50 percent by volume in the A horizon, 5 to 35 percent by volume in the Bw, BC, and C horizons

*Reaction:* very strongly acid to moderately acid where unlimed

*O horizon, where present:*

Color—black

Texture—slightly to highly decomposed woody plant material

*A horizon:*

Color—hue of 7.5YR to 2.5Y, value of 2 to 4, and chroma of 1 to 4

Texture—loam in the fine earth fraction

*Bw horizon:*

Color—hue of 7.5YR to 2.5Y, value of 4 to 6, and chroma of 4 to 6

Texture—silt loam to sandy loam in the fine earth fraction

*BC horizon:*

Color—hue of 7.5YR to 2.5Y, value of 4 to 6, and chroma of 2 to 6

Texture—silt loam to loamy sand in the fine earth fraction

*C horizon, where present:*

Color—hue of 7.5YR to 5Y, value of 4 or 5, and chroma of 2 to 4

Texture—silt loam to loamy sand in the fine earth fraction

*2R horizon:*

Hard granitic gneiss bedrock

## Chippewa Series

*Depth class:* very deep

*Drainage class:* poorly drained

*Permeability:* moderate above the fragipan, very slow or slow in the fragipan and substratum

*Parent material:* fine-loamy till derived from limestone, sandstone, and shale

*Landscape:* drumlin fields

*Landform:* interdrumlins

*Associated soils:* Alden, Venango

*Slope range:* 0 to 8 percent

**Taxonomic class:** Fine-loamy, mixed, active, mesic Typic Fragiaquepts

### Typical Pedon

ChwBc—Chippewa silt loam, 0 to 8 percent slopes, extremely stony; Wantage Township, Sussex County, 600 feet north of the intersection of Mt. Salem Road and Goodrich Road, 300 feet west of Goodrich Road, in a marsh; USGS Unionville, NY-NJ topographic quadrangle; lat. 41 degrees 18 minutes 36 seconds N. and long. 74 degrees 35 minutes 51 seconds W. NAD83.

Oi—0 to 2 inches; black (10YR 2/1) slightly decomposed herbaceous plant material.

A—2 to 4 inches; very dark grayish brown (10YR 3/2) silt loam (2.5Y 6/2, dry); moderate fine and weak medium granular structure; very friable; many fine and few medium roots; very strongly acid (pH—5.0); abrupt wavy boundary.

Eg—4 to 8 inches; gray (2.5Y 5/1) silt loam; moderate medium subangular blocky structure; friable; few fine roots; 2 percent subrounded sandstone and shale medium gravel; many medium distinct light brownish gray (10YR 6/2) iron depletions with clear boundaries in the matrix; common fine prominent dark yellowish brown (10YR 4/6) iron accumulations with clear boundaries on faces of peds; strongly acid (pH—5.2); clear wavy boundary.

Bg—8 to 13 inches; grayish brown (10YR 5/2) silt loam; moderate medium and fine subangular blocky structure; friable; 5 percent subrounded sandstone and shale coarse gravel; many coarse distinct light brownish gray (2.5Y 6/2) iron depletions with clear boundaries in the matrix; many medium prominent dark yellowish brown (10YR 4/6) iron accumulations with clear boundaries in the matrix; strongly acid (pH—5.2); clear wavy boundary.

Bxg1—13 to 21 inches; grayish brown (2.5Y 5/2) silt loam; weak medium prismatic structure parting to moderate coarse and fine subangular blocky structure; firm; 5 percent subrounded sandstone and shale coarse gravel; many coarse distinct brown (10YR 4/3) iron accumulations with clear boundaries on vertical faces of prisms; many common prominent dark yellowish brown (10YR 4/6) iron accumulations with clear boundaries in the matrix; moderately acid (pH—5.6); clear wavy boundary.

Bxg2—21 to 29 inches; grayish brown (2.5Y 5/1) silt loam; weak coarse prismatic structure parting to massive; firm; 5 percent subrounded sandstone and shale coarse gravel; many coarse prominent dark yellowish brown (10YR 4/6) iron accumulations with clear boundaries on the vertical faces of prisms and in the matrix; moderately acid (pH—5.6); clear wavy boundary.

Cg1—29 to 34 inches; grayish brown (2.5Y 5/1) silt loam; massive; firm; 5 percent subrounded sandstone and shale coarse gravel; many coarse prominent dark yellowish brown (10YR 4/6) iron accumulations with clear boundaries in the matrix; moderately acid (pH—5.6); clear wavy boundary.

Cg2—34 to 60 inches; grayish brown (2.5Y 5/1) fine sandy loam; massive; friable; many coarse prominent dark yellowish brown (10YR 4/6) iron accumulations with clear boundaries in the matrix; moderately acid (pH—5.6).

### Range in Characteristics

*Thickness of solum:* 30 to 56 inches

*Depth to bedrock:* greater than 60 inches

*Depth to fragipan:* 8 to 20 inches

*Rock fragments:* 0 to 35 percent by volume in the A, Eg, and Bg horizons; 0 to 50 percent by volume in the Bxg and Cg horizons

*Reaction:* very strongly acid to slightly acid in the A, Eg, and Bg horizons; strongly acid to neutral in the Bxg horizon; moderately acid to moderately alkaline in the Cg horizon where unlimed

*O horizon, where present:*

Color—black

Texture—slightly decomposed woody plant material

*A horizon:*

Color—hue of 10YR or 2.5Y, value of 2 to 4, and chroma of 1 or 2

Texture—silt loam in the fine earth fraction

*Eg horizon:*

Color—hue of 10YR to 5Y, value of 4 to 6, and chroma of 0 or 1

Texture—loam, silt loam, or silty clay loam in the fine earth fraction

*Bg horizon:*

Color—hue of 10YR to 5Y, value of 3 to 5, and chroma of 1 or 2

Texture—loam, silt loam, clay loam, or silty clay loam in the fine earth fraction

*Bxg horizon:*

Color—hue of 10YR to 5Y, value of 3 to 6, and chroma of 1 or 2

Texture—fine sandy loam, loam, silt loam, clay loam or silty clay loam in the fine earth fraction

*Cg horizons:*

Color—hue of 10YR to 5Y, value of 3 to 6, and chroma of 1 or 2

Texture—fine sandy loam, loam, silt loam, clay loam or silty clay loam in the fine earth fraction

## Colonie Series

*Depth class:* very deep

*Drainage class:* somewhat excessively drained

*Permeability:* moderately rapid or rapid

*Parent material:* post glacial sandy alluvium and/or sandy eolian deposits and/or glaciofluvial deposits

*Landscape:* river valleys

*Landform:* outer terraces

*Associated soils:* Delaware, Unadilla

*Slope range:* 0 to 8 percent

**Taxonomic class:** Mixed, mesic Lamellic Udipsamments

### Typical Pedon

CorB—Colonie loamy fine sand, 3 to 8 percent slopes; Sandyston Township, Sussex County, Delaware Water Gap National Recreation Area, 3,168 feet north of the

intersection of Old Mine Road and Van Ness Rd, in wooded area; USGS Culvers Gap topographic quadrangle; lat. 41 degrees 14 minutes 50.1 seconds N. and long. 74 degrees 50 minutes 37.1 seconds W. NAD83.

- A—0 to 2 inches; dark brown (10YR 3/3) loamy fine sand; weak fine granular structure; very friable; many fine and common medium roots; slightly acid (pH—6.1); clear smooth boundary.
- Ap—2 to 11 inches; dark yellowish brown (10YR 3/4) loamy fine sand; weak medium and fine subangular blocky structure; very friable; common fine and medium roots; moderately acid (pH—5.8); clear smooth boundary.
- E—11 to 24 inches; strong brown (7.5YR 4/6) fine sand; weak medium subangular blocky structure; very friable; common medium and few coarse and fine roots; strongly acid (pH—5.3); gradual wavy boundary.
- E and Bt1—24 to 40 inches; strong brown (7.5YR 4/6) fine sand; weak medium subangular blocky structure; friable; few medium roots; contains several wavy lamellae 2 mm thick that are yellowish red (5YR 4/6) fine sandy loam; strongly acid (pH—5.3); gradual wavy boundary.
- E and Bt2—40 to 62 inches; yellowish brown (10YR 5/4) and dark yellowish brown (10YR 4/4) fine sand; weak medium and fine subangular blocky structure; very friable; contains several wavy lamellae 2 mm thick that are strong brown (7.5YR 4/6) fine sandy loam; strongly acid (pH—5.3).

### Range in Characteristics

*Thickness of solum:* 40 to 75 inches

*Depth to bedrock:* greater than 62 inches

*Rock fragments:* 0 to 5 percent by volume

*Reaction:* strongly acid to slightly acid in the A and E horizons, strongly acid to neutral in the E and Bt horizons, moderately acid to neutral in the C horizon where unlimed

#### *A horizon:*

Color—hue of 7.5YR or 10YR, value of 3 to 5, and chroma of 2 or 3

Texture—loamy fine sand in the fine earth fraction

#### *E horizon:*

Color—hue of 5YR through 2.5Y, value of 4 to 6, and chroma of 3 to 6

Texture—fine sand or loamy fine sand in the fine earth fraction

#### *E and Bt horizon:*

Color—hue of 5YR through 2.5Y, value of 3 to 6, and chroma of 3 to 6

Texture—fine sand to fine sandy loam in the fine earth fraction

#### *C horizon, where present:*

Color—hue of 7.5YR to 2.5Y, value of 4 to 6, and chroma of 2 to 4

Texture—fine sand or loamy fine sand in the fine earth fraction

In some pedons, there are contrasting layers of finer or coarser textured deposits below 40 inches.

## Delaware Series

*Depth class:* very deep

*Drainage class:* well drained

*Permeability:* moderately rapid in the surface layer and subsoil, rapid in the substratum

*Parent material:* post glacial coarse-loamy alluvium (fig. 10)

*Landscape:* river valleys



Figure 10.—A profile of Delaware soils. These very deep, well drained soils formed in postglacial alluvium deposited along the Delaware River in the Upper Delaware Valley. The numbers on the tape indicate depth in inches.

*Landform:* terraces

*Associated soils:* Colonie, Unadilla

*Slope range:* 0 to 8 percent

**Taxonomic class:** Coarse-loamy, mixed, active, mesic Typic Dystrudepts

#### Typical Pedon

DefAr—Delaware fine sandy loam, 0 to 3 percent slopes, rarely flooded; Pahaquarry Township, Warren County, Delaware Water Gap National Recreational Area, Depew Island Picnic Area, 2,050 feet northwest of the intersection of Old Mine Rd. and an access road, 500 feet northeast of the access road, in a crop field; USGS Bushkill

topographic quadrangle; lat. 41 degrees 03 minutes 42.7 seconds N. and long. 75 degrees 00 minutes 32.8 seconds W. NAD83.

Oi—0 to 1 inch; black (10YR 2/1) slightly decomposed organic material.

Ap1—1 to 4 inches; very dark grayish brown (10YR 3/2) fine sandy loam; moderate fine and medium granular structure; very friable; many fine roots; strongly acid (pH—5.3); abrupt smooth boundary.

Ap2—4 to 11 inches; dark yellowish brown (10YR 4/4) fine sandy loam; weak fine subangular blocky structure parting to weak fine granular; very friable; common coarse, medium and fine roots; strongly acid (pH—5.3); abrupt wavy boundary.

Bw1—11 to 20 inches; dark yellowish brown (10YR 4/4) fine sandy loam; moderate fine and medium subangular blocky structure; very friable; strongly acid (pH—5.3); clear wavy boundary.

Bw2—20 to 33 inches; brown (7.5YR 4/4) fine sandy loam; moderate fine and medium subangular blocky structure; very friable; strongly acid (pH—5.3); clear wavy boundary.

BC—33 to 41 inches; dark yellowish brown (10YR 4/4) fine sandy loam; weak fine and medium subangular blocky structure; very friable; strongly acid (pH—5.3); clear wavy boundary.

C1—41 to 56 inches; 60 percent dark yellowish brown (10YR 4/4) fine sandy loam; 40 percent brown (7.5YR 4/4) fine sandy loam; massive; very friable; strongly acid (pH—5.3); clear wavy boundary.

C2—56 to 60 inches; brown (7.5YR 4/4) loam; massive; friable; strongly acid (pH—5.3).

### Range in Characteristics

*Thickness of solum:* 30 to 60 inches

*Depth to bedrock:* greater than 74 inches

*Rock fragments:* 0 to 5 percent by volume

*Reaction:* strongly acid to slightly acid where unlimed

*O horizon, where present:*

Color—black or dark brown

Texture—slightly or moderately decomposed plant material

*Ap horizon:*

Color—hue of 7.5YR or 10YR, value of 3 or 4, and chroma of 2 to 4

Texture—fine sandy loam in the fine earth fraction

*Bw horizon:*

Color—hue of 5YR to 10YR, value of 3 to 5, and chroma of 3 to 6

Texture—fine sandy loam in the fine earth fraction

*BC horizon:*

Color—hue of 5YR to 10YR, value of 3 to 6, and chroma of 2 to 6

Texture—fine sandy loam in the fine earth fraction

*C horizon:*

Color—hue of 5YR to 10YR, value of 4 to 6, and chroma of 2 to 6

Texture—fine sandy loam to loamy sand in the fine earth fraction

## Farmington Series

*Depth class:* shallow

*Drainage class:* well drained

*Permeability:* moderate or moderately rapid

*Parent material:* loamy till derived from limestone and dolomite

*Landscape:* till plains

*Landform:* ground moraines

*Associated soils:* Galway; Rock outcrop; Urban land; Wassaic

*Slope range:* 0 to 60 percent

**Taxonomic class:** Loamy, mixed, active, mesic Lithic Eutrudepts

### Typical Pedon

FaxC—Farmington-Rock outcrop complex, 0 to 15 percent slopes; Andover Township, Sussex County, Kittatinny Valley State Park, 1.9 miles northeast of the intersection of Route 206 and Goodale Road, 1,400 feet southeast of Goodale Road, 200 feet southwest of powerline, in a wooded area; USGS Newton East, NJ topographic quadrangle; lat. 41 degrees 01 minutes 26 seconds N. and long. 74 degrees 43 minutes 48 seconds W. NAD27.

Oi—0 to 1 inch; black (10YR 2/1) slightly decomposed woody plant material.

A—1 to 3 inches; brown (10YR 4/3) silt loam (2.5Y 5/3, dry); moderate fine granular structure; very friable; many fine and few coarse roots; 5 percent subrounded dolomite and limestone medium gravel; strongly acid (pH—5.2); abrupt wavy boundary.

Bw1—3 to 9 inches; yellowish brown (10YR 5/6) silt loam; moderate fine and weak medium subangular blocky structure; friable; common fine and few coarse roots; 5 percent subrounded dolomite and limestone medium gravel; strongly acid (pH—5.2); abrupt wavy boundary.

Bw2—9 to 15 inches; dark yellowish brown (10YR 4/6) silt loam; moderate medium and fine subangular blocky structure; friable; few fine roots; 5 percent subrounded dolomite and limestone medium gravel; strongly acid (pH—5.4); abrupt wavy boundary.

2R—15 inches; vertically tilted hard gray dolomite bedrock.

### Range in Characteristics

*Thickness of solum:* 10 to 20 inches

*Depth to bedrock:* 10 to 20 inches (fig. 11)

*Rock fragments:* 5 to 35 percent by volume

*Reaction:* strongly acid through neutral in the A horizon, strongly acid through mildly alkaline in the Bw horizon where unlimed

*O horizon, where present:*

Color—black

Texture—slightly decomposed woody plant material

*A horizon:*

Color—hue of 7.5YR or 10YR, value of 3 to 5, and chroma of 1 to 3

Texture—silt loam in the fine earth fraction

*Bw horizon:*

Color—hue of 7.5YR to 2.5Y, value of 4 or 5, and chroma of 2 to 6

Texture—fine sandy loam, very fine sandy loam, loam or silt loam in the fine earth fraction

*2R horizon:*

Hard or soft dolomite, limestone, and calcareous sandstone bedrock

## Fluvaquents

*Depth class:* very deep

*Drainage class:* somewhat poorly drained

*Permeability:* moderate to rapid



*Parent material:* recent alluvium

*Landscape:* river valleys

*Landform:* flood plains

*Associated soils:* Udifluvents

*Slope range:* 0 to 3 percent

**Taxonomic class:** Fluvaquents

### Sample Pedon

FmhAs—Fluvaquents, loamy, 0 to 3 percent slopes, occasionally flooded; Byram Township, Sussex County, Allamuchy Mountain State Park, 300 feet northeast of the intersection of County Route 604 and Jefferson Lake Road, in a wooded area; USGS



**Figure 11.—A profile of Farmington soils. These shallow, well drained soils are found on dolomite and limestone bedrock areas of Kittatinny Valley. Dolomite bedrock is present in this profile at a depth of 18 inches. The numbers on the tape indicate depth in inches.**

Stanhope topographic quadrangle; lat. 40 degrees 55 minutes 18 seconds N., and long. 74 degrees 43 minutes 56 seconds W. NAD83.

- A1—0 to 5 inches; very dark grayish brown (10YR 3/2) silt loam; moderate fine granular structure; friable; few fine distinct dark red (2.5YR 4/6) iron accumulations with clear boundaries in the matrix; strongly acid (pH—5.3); clear smooth boundary.
- A2—5 to 12 inches; dark gray (10YR 4/1) silt loam; moderate fine granular structure; friable; many fine distinct dark red (2.5YR 4/6) iron accumulations with clear boundaries in the matrix; strongly acid (pH—5.3); clear smooth boundary.
- C1—12 to 18 inches; grayish brown (2.5Y 5/2) sandy clay loam; massive; friable; many medium prominent yellowish red (5YR 4/6) iron accumulations with clear boundaries in the matrix; strongly acid (pH—5.5); clear wavy boundary.
- C2—18 to 24 inches; dark yellowish brown (10YR 4/6) sandy clay loam; massive; friable; common medium prominent light brownish gray (2.5Y 6/2) iron depletions with clear boundaries in the matrix; many medium faint strong brown (7.5YR 4/6) iron accumulations with clear boundaries in the matrix; strongly acid (pH—5.5); gradual wavy boundary.
- C3—24 to 60 inches; light brownish gray (2.5Y 6/2) sandy loam; massive; friable; many medium prominent dark brown strong brown (7.5YR 4/6) iron accumulations with clear boundaries in the matrix; strongly acid (pH—5.5).

### Range in Characteristics

*Depth to bedrock:* greater than 60 inches

*Rock fragments:* 0 to 15 percent by volume in the A and upper C horizons, 0 to 35 percent by volume in the lower C horizons

*Reaction:* strongly acid to neutral

*O horizon, where present:*

Color—black or dark brown

Texture—slightly to highly decomposed organic material

*A horizon:*

Color—hue of 7.5YR to 2.5Y, value of 2 to 4, and chroma of 0 to 2

Texture—silt loam in the fine earth fraction

*C horizon:*

Color—hue of 7.5YR to 5Y, value of 4 to 6, and chroma of 1 to 6

Texture—silty clay loam, silt loam, sandy clay loam, or sandy loam in the fine earth fraction

In some pedons, stratified sand and gravel occur in the lower C horizons

Redoximorphic features—iron depletions in shades of gray and iron concentrations in shades of brown

## Fredon Series

*Depth class:* very deep

*Drainage class:* somewhat poorly drained

*Permeability:* moderately slow or moderate in the surface layer and subsoil, rapid in the substratum

*Parent material:* glaciofluvial deposits derived from sandstone and/or limestone and dolomite and/or granite and gneiss

*Landscape:* outwash plains

*Landform:* drainageways

*Associated soils:* Halsey, Hero

*Slope range:* 0 to 3 percent

**Taxonomic class:** Coarse-loamy over sandy or sandy-skeletal, mixed, active, nonacid, mesic Aeric Endoaquepts

### Typical Pedon

FrdAb—Fredon-Halsey complex, 0 to 3 percent slopes, very stony; Wallpack Township, Sussex County, Flatbrook-Roy Wildlife Management Area, 1,400 feet southwest of intersection of Fish & Game Road and Brook Road, 650 feet west of Brook Road, on a terrace above the drainageway of a forested wetland area; USGS Culvers Gap, NJ topographic quadrangle; lat. 41 degrees 10 minutes 23 seconds N. and long. 74 degrees 51 minutes 45 seconds W. NAD27.

Oi—0 to 1 inch; black (10YR 2/1) slightly decomposed woody plant material.

A—1 to 8 inches; very dark grayish brown (10YR 3/2) silt loam (10YR 6/2, dry); moderate medium and fine granular structure; very friable; few fine and common coarse roots; many medium prominent strong brown (7.5YR 4/6) iron accumulations with clear boundaries in the matrix; 10 percent rounded red and gray sandstone and gray conglomerate medium gravel; moderately acid (pH—5.6); clear wavy boundary.

Bw1—8 to 14 inches; yellowish brown (10YR 5/4) silt loam; dark yellowish brown (10YR 4/4) silt loam; moderate medium and fine subangular blocky structure; friable; few fine and coarse roots; many medium prominent strong brown (7.5YR 4/6) iron accumulations with clear boundaries in the matrix; 5 percent rounded red and gray sandstone and gray conglomerate fine gravel; moderately acid (pH—5.6); clear wavy boundary.

Bw2—14 to 18 inches; yellowish brown (10YR 5/4) loam; moderate coarse platy parting to moderate medium and fine subangular blocky structure; firm; few fine roots; many coarse distinct light brownish gray (10YR 6/2) iron depletions with clear boundaries in the matrix; many medium distinct strong brown (7.5YR 4/6) iron accumulations with clear boundaries in the matrix; common fine distinct black (10YR 2/1) manganese accumulations with sharp boundaries in the matrix; 5 percent rounded red and gray sandstone and gray conglomerate medium gravel; moderately acid (pH—5.6); clear wavy boundary.

Bw3—18 to 23 inches; light brownish gray (10YR 6/2) loam; moderate coarse platy parting to moderate medium and fine subangular blocky structure; firm; few fine roots; many medium distinct yellowish brown (10YR 5/4) and strong brown (7.5YR 4/6) iron accumulations with clear boundaries in the matrix; common fine distinct black (10YR 2/1) manganese accumulations with sharp boundaries in the matrix; 5 percent rounded red and gray sandstone and gray conglomerate medium gravel; moderately acid (pH—5.6); clear wavy boundary.

2C1—23 to 31 inches; dark yellowish brown (10YR 4/4) extremely gravelly loamy coarse sand; single-grain; loose; 40 percent rounded red and gray sandstone and gray conglomerate fine gravel; 20 percent rounded red and gray sandstone and gray conglomerate medium gravel; moderately acid (pH—5.6), clear wavy boundary.

2C2—31 to 36 inches; brown (10YR 4/3) extremely gravelly coarse sand; single-grain; loose; 50 percent rounded red and gray sandstone and gray conglomerate fine gravel; 15 percent rounded red and gray sandstone and gray conglomerate medium gravel; moderately acid (pH—5.6); clear wavy boundary.

2C3—36 to 45 inches; brown (10YR 4/3) very gravelly coarse sand; single-grain; loose; 30 percent rounded red and gray sandstone and gray conglomerate fine gravel; 10 percent rounded red and gray sandstone and gray conglomerate coarse gravel; 10 percent rounded red and gray sandstone and gray conglomerate medium gravel; moderately acid (pH—5.6); clear wavy boundary.

2C4—45 to 55 inches; brown (10YR 5/3) extremely gravelly coarse sand; single-grain; loose; 30 percent rounded red and gray sandstone and gray conglomerate fine

gravel; 20 percent rounded red and gray sandstone and gray conglomerate medium gravel; 10 percent rounded red and gray sandstone and gray conglomerate coarse gravel; moderately acid (pH—5.6); clear wavy boundary.  
 2C5—55 to 60 inches; dark grayish brown (10YR 4/2) very gravelly coarse sand; single-grain; loose; 40 percent rounded red and gray sandstone and gray conglomerate fine gravel; 10 percent rounded red and gray sandstone and gray conglomerate medium gravel; moderately acid (pH—5.8).

### Range in Characteristics

*Thickness of solum:* 22 to 40 inches

*Depth to bedrock:* greater than 60 inches

*Depth to free carbonates:* greater than 60 inches

*Rock fragments:* 0 to 35 percent by volume in the A and Bw horizons, 0 to 65 percent by volume in the 2C horizon

*Reaction:* strongly acid to neutral in the A and Bw horizons, moderately acid to moderately alkaline in the 2C horizon where unlimed

*O horizon, where present:*

Color—black

Texture—slightly decomposed woody plant material

*A horizon:*

Color—hue of 10YR or 2.5Y, value of 2 to 4, and chroma of 1 or 2

Texture—silt loam in the fine earth fraction

*Bw horizon:*

Color—hue of 7.5YR to 5Y, value of 4 to 6, and chroma of 1 to 4

Texture—fine sandy loam, very fine sandy loam, loam, or silt loam in the fine earth fraction

*2C horizon:*

Color—hue of 5YR to 5Y, value of 3 to 6, and chroma of 0 to 4

Texture—coarse sand to loamy fine sand in the fine earth fraction

## Galway Series

*Depth class:* moderately deep

*Drainage class:* well drained

*Permeability:* moderate

*Parent material:* coarse-loamy till derived from limestone and dolomite

*Landscape:* till plains

*Landform:* ground moraines

*Associated soils:* Farmington, Rock outcrop, Wallpack, Wassaic

*Slope range:* 0 to 60 percent

**Taxonomic class:** Coarse-loamy, mixed, superactive, mesic Typic Eutrudepts

### Typical Pedon

RnfC—Rock outcrop-Farmington-Galway complex, 8 to 15 percent slopes; Hampton Township, Sussex County, Swartswood State Park, 1,400 feet south of intersection of Route 622 and Route 619, 500 feet southeast of Route 619, in a wooded area; USGS Newton West, NJ topographic quadrangle; lat. 41 degrees 05 minutes 28 seconds N. and long. 74 degrees 49 minutes 04 seconds W. NAD27.

Oi—0 to 2 inches; black (10YR 2/1) slightly decomposed woody plant material.

Oe—2 to 3 inches; moderately decomposed woody plant material.

A—3 to 5 inches; brown (10YR 4/3) loam (2.5Y 5/3, dry); weak medium and fine subangular blocky structure; very friable; common fine and few medium roots; 5 percent subrounded dolomite medium gravel; very strongly acid (pH—5.0); abrupt wavy boundary.

Bw1—5 to 15 inches; yellowish brown (10YR 5/6) gravelly loam; moderate medium and fine subangular blocky structure; friable; common fine and few medium and coarse roots; 10 percent subrounded gray dolomite medium gravel; 5 percent subrounded dolomite coarse gravel; strongly acid (pH—5.2); clear wavy boundary.

Bw2—15 to 24 inches; 60 percent dark yellowish brown (10YR 4/6) gravelly loam; 40 percent yellowish brown (10YR 5/6) gravelly loam; moderate coarse and medium subangular blocky structure; firm; few fine roots; 15 percent subrounded dolomite coarse gravel; 10 percent subrounded gray dolomite medium gravel; strongly acid (pH—5.2); abrupt irregular boundary.

2R—24 inches; vertically tilted hard gray dolomite bedrock.

### Range in Characteristics

*Thickness of solum:* 18 to 30 inches

*Depth to bedrock:* 20 to 40 inches

*Rock fragments:* 0 to 35 percent by volume in the A horizon, 3 to 35 percent by volume in the Bw horizon

*Reaction:* very strongly acid to neutral in the A horizon, strongly acid to slightly alkaline in the Bw horizon where unlimed

*O horizon, where present:*

Color—black

Texture—slightly decomposed woody plant material

*A horizon:*

Color—hue of 10YR or 2.5Y, value of 3 or 4, and chroma of 2 or 3

Texture—loam in the fine earth fraction

*Bw horizon:*

Color—hue of 5YR to 2.5Y, value of 3 to 6, and chroma of 3 to 6

Texture—fine sandy loam, loam, or silt loam in the fine earth fraction

*2R horizon:*

Hard or soft dolomite, limestone, and calcareous sandstone bedrock

## Halsey Series

*Depth class:* very deep

*Drainage class:* very poorly drained

*Permeability:* moderate or moderately rapid in the surface layer and subsoil, rapid in the substratum

*Parent material:* glaciofluvial deposits derived from sandstone and/or limestone and dolomite and/or granite and gneiss

*Landscape:* outwash plains

*Landform:* drainageways

*Associated soils:* Fredon, Hero

*Slope range:* 0 to 3 percent

**Taxonomic class:** Coarse-loamy over sandy or sandy-skeletal, mixed, active, nonacid, mesic Typic Humaquepts

### Typical Pedon

FrdAb—Fredon-Halsey complex, 0 to 3 percent slopes, very stony; Wallpack Township, Sussex County, Flatbrook-Roy Wildlife Management Area, 1,450 feet southwest of intersection of Fish & Game Road and Brook Road, 700 feet west of Brook Road, in the drainageway of a forested wetland area; USGS Culvers Gap, NJ topographic quadrangle; lat. 41 degrees 10 minutes 21 seconds N. and long. 74 degrees 51 minutes 45 seconds W. NAD27.

Oi—0 to 1 inch; black (10YR 2/1) slightly decomposed woody plant material.

A1—1 to 5 inches; very dark grayish brown (10YR 3/2) silt loam (10YR 5/2, dry); moderate fine and weak medium granular structure; very friable; many fine and few medium roots; common medium faint gray (10YR 6/1) iron depletions with clear boundaries in the matrix; common fine prominent brown (7.5YR 4/4) iron accumulations with clear boundaries in the matrix; strongly acid (pH—5.2); abrupt wavy boundary.

A2—5 to 11 inches; very dark grayish brown (10YR 3/2) silt loam (10YR 5/2, dry); moderate fine and weak coarse subangular blocky structure; friable; common fine and coarse roots; many fine faint gray (10YR 6/1) iron depletions with clear boundaries in the matrix; many fine prominent brown (7.5YR 4/4) iron accumulations with clear boundaries in the matrix; strongly acid (pH—5.2); abrupt wavy boundary.

Bg—11 to 20 inches; gray (10YR 6/1) silt loam; moderate fine and weak medium subangular blocky structure; friable; few fine and coarse roots; many coarse prominent strong yellowish brown (10YR 5/6) and common medium prominent brown (7.5YR 4/4) iron accumulations with clear boundaries in the matrix; strongly acid (pH—5.4); clear wavy boundary.

2Cg1—20 to 25 inches; grayish brown (10YR 5/2) loamy sand; massive; very friable; many coarse faint brown (10YR 4/3) iron accumulations with clear boundaries in the matrix; 5 percent rounded red and gray sandstone and gray conglomerate fine gravel; moderately acid (pH—5.6); clear wavy boundary.

2Cg2—25 to 35 inches; grayish brown (10YR 5/2) very gravelly coarse sand; single-grain; loose; 25 percent rounded red and gray sandstone and gray conglomerate fine gravel; 15 percent rounded red and gray sandstone and gray conglomerate medium gravel; moderately acid (pH—5.8); clear wavy boundary.

2Cg3—35 to 49 inches; dark grayish brown (10YR 4/2) very gravelly coarse sand; single-grain; loose; 30 percent rounded red and gray sandstone and gray conglomerate fine gravel; 15 percent rounded red and gray sandstone and gray conglomerate coarse gravel; 10 percent rounded red and gray sandstone and gray conglomerate medium gravel; moderately acid (pH—5.8); clear wavy boundary.

2Cg4—49 to 56 inches; brown (7.5YR 5/2) extremely gravelly coarse sand; single-grain; loose; 30 percent rounded red and gray sandstone and gray conglomerate fine gravel; 20 percent rounded red and gray sandstone and gray conglomerate medium gravel; 15 percent rounded red and gray sandstone and gray conglomerate coarse gravel; moderately acid (pH—5.8); clear wavy boundary.

2Cg5—56 to 60 inches; dark gray (10YR 4/1) extremely gravelly coarse sand; single-grain; loose; 25 percent rounded red and gray sandstone and gray conglomerate coarse gravel; 20 percent rounded red and gray sandstone and gray conglomerate medium gravel; 15 percent rounded red and gray sandstone and gray conglomerate fine gravel; moderately acid (pH—5.8).

### Range in Characteristics

*Thickness of solum:* 20 to 39 inches

*Depth to bedrock:* greater than 60 inches

*Depth to free carbonates:* greater than 60 inches

*Rock fragments:* 0 to 35 percent by volume in the A and Bg horizons, 0 to 65 percent by volume in the 2Cg horizon

*Reaction:* strongly acid to neutral in the A and Bg horizons, moderately acid to moderately alkaline in the 2Cg horizon where unlimed

*O horizon, where present:*

Color—black

Texture—slightly to highly decomposed woody plant material

*A horizon:*

Color—hue of 10YR or 2.5Y, value of 2 or 3, and chroma of 0 to 2

Texture—silt loam in the fine earth fraction

*Bg horizon:*

Color—hue of 7.5YR to 5Y and 5BG, value of 4 to 6, and chroma of 0 to 2

Texture—fine sandy loam, very fine sandy loam, loam, or silt loam in the fine earth fraction

*2Cg horizon:*

Color—hue of 7.5YR to 5Y, value of 3 to 6, and chroma of 0 to 2

Texture—coarse sand to loamy fine sand in the fine earth fraction

## Hazen Series

*Depth class:* very deep

*Drainage class:* well drained

*Permeability:* moderate or moderately rapid in the surface layer and subsoil, rapid in the substratum

*Parent material:* glaciofluvial deposits derived from sandstone and shale and/or limestone and dolomite and/or conglomerate

*Landscape:* outwash plains

*Landform:* valley trains

*Associated soils:* Colonie; Hero; Hoosic; Otisville; Urban land

*Slope range:* 0 to 15 percent

**Taxonomic class:** Coarse-loamy, mixed, active, mesic Mollic Hapludalfs

### Typical Pedon

HdxAb—Hazen-Hoosic complex, 0 to 3 percent slopes, very stony; Sandyston Township, Sussex County, Flatbrook-Roy Wildlife Management Area, 3,200 feet west of intersection of Route 615 and Route 521, 300 feet south of Route 615, in a wooded abandoned cropfield; USGS Culvers Gap, NJ topographic quadrangle; lat. 41 degrees 11 minutes 49 seconds N. and long. 74 degrees 49 minutes 49 seconds W. NAD83.

Oi—0 to 1 inch; black (10YR 2/1) slightly decomposed woody plant material.

Ap—1 to 10 inches; dark brown (10YR 3/3) loam (10YR 5/3, dry); moderate medium and fine subangular blocky structure; friable; common fine and few medium roots; 5 percent rounded red and gray sandstone and gray conglomerate medium gravel; moderately acid (pH—5.8); abrupt smooth boundary.

Bt—10 to 18 inches; strong brown (7.5YR 4/6) sandy loam; moderate medium and weak fine subangular blocky structure; friable; few fine and medium roots; common faint discontinuous strong brown (7.5YR 4/6) clay films on faces of peds and on surfaces along pores; 10 percent rounded red and gray sandstone and gray conglomerate medium gravel; slightly acid (pH—6.2); clear irregular boundary.

- 2C1—18 to 29 inches; dark brown (7.5YR 3/4) very stony loamy coarse sand; massive; very friable; few fine roots; 40 percent rounded red and gray sandstone and gray conglomerate stones; 5 percent rounded red and gray sandstone and gray conglomerate cobbles; 5 percent rounded red and gray sandstone and gray conglomerate medium gravel; slightly acid (pH—6.2), clear irregular boundary.
- 2C2—29 to 41 inches; dark brown (7.5YR 3/4) very gravelly coarse sand; single-grain; loose; few fine roots; 25 percent rounded red and gray sandstone and gray conglomerate medium gravel; 10 percent rounded red and gray sandstone and gray conglomerate coarse gravel; 10 percent rounded red and gray sandstone and gray conglomerate fine gravel; 5 percent rounded red and gray sandstone and gray conglomerate stones; 5 percent rounded red and gray sandstone and gray conglomerate cobbles; slightly acid (pH—6.4); clear irregular boundary.
- 2C3—41 to 60 inches; dark brown (7.5YR 3/4) extremely gravelly coarse sand; strong brown (7.5YR 4/6) extremely gravelly coarse sand; single-grain; loose; few fine roots; 30 percent rounded red and gray sandstone and gray conglomerate coarse gravel; 10 percent rounded red and gray sandstone and gray conglomerate medium gravel; 10 percent rounded red and gray sandstone and gray conglomerate fine gravel; 10 percent rounded red and gray sandstone and gray conglomerate stones; 5 percent rounded red and gray sandstone and gray conglomerate cobbles; slightly acid (pH—6.4).

### Range in Characteristics

*Thickness of solum:* 14 to 40 inches

*Depth to bedrock:* greater than 60 inches

*Depth to free carbonates:* greater than 60 inches

*Rock fragments:* 0 to 35 percent by volume in the A and Bt horizons, 10 to 65 percent in the 2C horizon

*Reaction:* moderately acid to slightly acid in the A and Bt horizons, slightly acid to slightly alkaline in the 2C horizon where unlimed

*O horizon, where present:*

Color—black

Texture—slightly decomposed woody plant material

*A horizon:*

Color—hue of 7.5YR or 10YR, value of 3, and chroma of 2 or 3

Texture—loam in the fine earth fraction

*Bt horizon:*

Color—hue of 7.5YR or 10YR, value of 4 or 5, and chroma of 4 to 6

Texture—sandy loam or coarse sandy loam in the fine earth fraction

*2C horizon:*

Color—hue of 7.5YR or 10YR, value of 3 to 6, and chroma of 4 to 6

Texture—coarse sand to loamy sand in the fine earth fraction

## Hibernia Series

*Depth class:* very deep

*Drainage class:* somewhat poorly drained

*Permeability:* moderate above the fragipan, very slow or slow in the fragipan, moderate or moderately rapid in the substratum

*Parent material:* coarse-loamy till derived from granite and gneiss and/or limestone, sandstone, and shale and/or quartzite



*Landscape:* till plains

*Landform:* ground moraines

*Associated soils:* Alden; Rockaway

*Slope range:* 0 to 8 percent

**Taxonomic class:** Coarse-loamy, mixed, active, mesic Aquic Fragiudults

### Typical Pedon

HhmBc—Hibernia loam, 0 to 8 percent slopes, extremely stony; Vernon Township, Sussex County, Wawayanda State Park, 1,800 feet east of the intersection of Sheppard Lane and Cherry Ridge Road, 400 feet south of Cherry Ridge Road, in a wooded area; USGS Wawayanda, NJ-NY topographic quadrangle; lat. 41 degrees 09 minutes 40 seconds N. and long. 74 degrees 27 minutes 10 seconds W. NAD27.

Oi—0 to 2 inches; black (10YR 2/1) slightly decomposed woody plant material.

A—2 to 4 inches; very dark grayish brown (10YR 3/2) loam (10YR 5/2, dry); moderate fine and weak medium granular structure; very friable; many fine and few medium and coarse roots; 5 percent subrounded granitic gneiss and shale coarse gravel; very strongly acid (pH—4.8); abrupt wavy boundary.

Bt1—4 to 11 inches; dark yellowish brown (10YR 4/6) loam; moderate medium and fine subangular blocky structure; friable; common fine and few medium and coarse roots; common faint discontinuous dark yellowish brown (10YR 4/6) clay films on faces of peds and on surfaces along pores; 5 percent subrounded granitic gneiss and shale medium gravel; very strongly acid (pH—4.8); clear wavy boundary.

Bt2—11 to 19 inches; yellowish brown (10YR 5/4) loam; moderate medium and fine subangular blocky structure; friable; common fine and few medium roots; many faint discontinuous yellowish brown (10YR 5/4) clay films on faces of peds and on surfaces along pores; common coarse faint yellowish brown (10YR 5/6) iron accumulations with clear boundaries in the matrix; common coarse distinct light brownish gray (2.5Y 6/2) iron depletions with clear boundaries in the matrix; 5 percent subrounded granitic gneiss and shale medium gravel; very strongly acid (pH—5.0); clear wavy boundary.

Bx—19 to 29 inches; dark yellowish brown (10YR 4/4) gravelly loam; strong very coarse prismatic parting to moderate very thick platy structure; very firm; brittle; few medium roots; many faint discontinuous dark yellowish brown (10YR 4/4) clay films on faces of peds and around rock fragments; many coarse distinct light brownish gray (2.5Y 6/2) iron depletions with clear boundaries between prisms; many medium distinct strong brown (7.5YR 4/6) iron accumulations with clear boundaries on vertical faces of prisms; many coarse distinct light brownish gray (2.5Y 6/2) iron depletions with clear boundaries between prisms; 15 percent subrounded granitic gneiss and shale medium gravel; strongly acid (pH—5.2); clear irregular boundary.

C1—29 to 35 inches; yellowish brown (10YR 5/4) very cobbly silty clay loam; massive; firm; many coarse distinct light brownish gray (2.5Y 6/2) iron depletions with clear boundaries in the matrix; many medium faint strong brown (7.5YR 4/6) iron accumulations with clear boundaries in the matrix; 20 percent subrounded granitic gneiss and shale cobbles; 15 percent subrounded granitic gneiss and shale medium gravel; strongly acid (pH—5.2); clear irregular boundary.

C2—35 to 60 inches; light olive brown (2.5Y 5/4) extremely gravelly sandy loam; massive; very friable; 30 percent subrounded granitic gneiss and shale medium gravel; 15 percent subrounded granitic gneiss and shale coarse gravel; 15 percent subrounded granitic gneiss and shale fine gravel; strongly acid (pH—5.2).

### Range in Characteristics

*Thickness of solum:* 24 to 50 inches

*Depth to bedrock:* greater than 60 inches

*Depth to fragipan:* 18 to 36 inches

*Rock fragments:* 5 to 35 percent by volume in the A, Bt, and Bx horizons; 0 to 50 percent by volume in the C horizon

*Reaction:* extremely acid to strongly acid in the A horizon; very strongly acid to strongly acid in the Bt, Bx, and C horizons where unlimed

*O horizon, where present:*

Color—black

Texture—slightly decomposed woody plant material

*A horizon:*

Color—hue of 7.5YR or 10YR, value of 2 to 4, and chroma of 1 to 3

Texture—loam in the fine earth fraction

*Bt horizon:*

Color—hue of 7.5YR or 10YR, value of 4 or 5, and chroma of 4 to 6

Texture—sandy loam or loam in the fine earth fraction

*Bx horizon:*

Color—hue of 7.5YR to 2.5Y, value of 4 or 5, and chroma of 4 to 6

Texture—sandy loam or loam in the fine earth fraction

*C horizon:*

Color—hue of 10YR to 5Y, value of 4 to 6, and chroma of 2 to 6

Texture—sandy loam or loamy sand in the fine earth fraction

In some pedons, the C horizon has a texture of loam to silty clay loam in the fine earth fraction.

## Hinckley Series

*Depth class:* very deep

*Drainage class:* excessively drained

*Permeability:* rapid in the surface layer and subsoil, rapid or very rapid in the substratum

*Parent material:* glaciofluvial deposits derived from granite and gneiss

*Landscape:* outwash plains

*Landform:* outwash deltas

*Associated soils:* Horseneck, Riverhead

*Slope range:* 0 to 15 percent

**Taxonomic class:** Sandy-skeletal, mixed, mesic Typic Udorthents

### Typical Pedon

HkrgBb—Hinckley loamy coarse sand, 0 to 8 percent slopes, very stony; Byram Township, Sussex County, Allamuchy Mountain State Park, 1,600 feet north of intersection of County Route 604 and Jefferson Lake Road, 100 feet east of Jefferson Lake, in a wooded area; USGS Stanhope topographic quadrangle; lat. 40 degrees 55 minutes 32.07 seconds N. and long. 74 degrees 43 minutes 56.57 seconds W. NAD83.

Oi—0 to 1 inch; black (10YR 2/1) slightly decomposed plant material.

A—1 to 3 inches; very dark brown (10YR 2/2) loamy coarse sand; weak fine granular

- structure; very friable; many fine and medium roots; 12 percent rounded granitic gneiss medium gravel; very strongly acid (pH—5.0); clear wavy boundary.
- Bw1—3 to 9 inches; dark yellowish brown (10YR 4/4) extremely cobbly loamy coarse sand; weak fine and medium subangular blocky structure; friable; 30 percent rounded granitic gneiss cobbles; 24 percent rounded granitic gneiss medium gravel; 18 percent rounded granitic gneiss coarse gravel; strongly acid (pH—5.2); gradual wavy boundary.
- Bw2—9 to 19 inches; dark yellowish brown (10YR 4/6) extremely cobbly loamy coarse sand; weak fine and medium subangular blocky structure; friable; 30 percent rounded granitic gneiss cobbles; 24 percent rounded granitic gneiss medium gravel; 18 percent rounded granitic gneiss coarse gravel; strongly acid (pH—5.2); clear wavy boundary.
- C—19 to 60 inches; dark yellowish brown (10YR 3/6) extremely gravelly coarse sand; single grain; very friable; 27 percent rounded granitic gneiss medium gravel; 26 percent rounded granitic gneiss coarse gravel; 19 percent rounded granitic gneiss cobbles; moderately acid (pH—5.6).

### Range in Characteristics

*Thickness of solum:* 12 to 30 inches or more

*Depth to bedrock:* greater than 60 inches

*Rock fragments:* 5 to 50 percent by volume gravel, 0 to 30 percent by volume cobbles, and 0 to 3 percent by volume stones in the A and Bw horizons; 10 to 55 percent by volume gravel, 0 to 30 percent by volume cobbles, and 0 to 5 percent by volume stones in the C horizon

*Reaction:* extremely acid to moderately acid where unlimed

*O horizon, where present:*

Color—black or brown

Texture—slightly or moderately decomposed plant material

*A horizon:*

Color—hue of 7.5YR to 10YR, value of 2 to 4, and chroma of 1 to 4

Texture—loamy coarse sand in the fine earth fraction

*Bw horizon:*

Color—hue of 7.5YR to 10YR, value of 3 to 5, and chroma of 3 to 8

Texture—loamy coarse sand, loamy sand, or sandy loam in the fine earth fraction above a depth of 10 inches; sand, loamy coarse sand, or loamy sand in the fine earth fraction below 10 inches

*C horizon:*

Color—hue of 7.5YR to 2.5Y, value of 4 to 7, and chroma of 2 to 8

Texture—coarse sand, sand, loamy coarse sand, or loamy sand in the fine earth fraction

## Hollis Series

*Depth class:* shallow

*Drainage class:* well drained

*Permeability:* moderate or moderately rapid

*Parent material:* loamy till derived from granite and gneiss

*Landscape:* mountains

*Landform:* ground moraines

*Associated soils:* Chatfield; Rock outcrop; Rockaway

*Slope range:* 0 to 60 percent

**Taxonomic class:** Loamy, mixed, active, mesic Lithic Dystrudepts

### Typical Pedon

ChkC—Chatfield-Hollis-Rock outcrop complex, 0 to 15 percent slopes; Byram Township, Sussex County, Allamuchy Mountain State Park, 4,600 feet north of Route 604, in a wooded area; USGS Tranquility topographic quadrangle; lat. 40 degrees 55 minutes 50.42 seconds N. and long. 74 degrees 45 minutes 14.76 seconds W. NAD83.

Oi—0 to 1 inch; black (10YR 2/1) partially decomposed organic material.

Oa—1 to 3 inches; black (10YR 2/1) highly decomposed organic material.

A—3 to 6 inches; dark brown (10YR 3/3) cobbly loam; moderate fine granular structure; very friable; many fine and common medium roots; 11 percent subrounded granitic gneiss cobbles; 8 percent subrounded granitic gneiss coarse gravel; 1 percent subrounded granitic gneiss stones; very strongly acid (pH—5.0); clear wavy boundary.

Bw1—6 to 8 inches; dark yellowish brown (10YR 4/4) cobbly loam; weak medium and fine subangular blocky structure; friable; many fine and common medium roots; 11 percent subrounded granitic gneiss cobbles; 8 percent subrounded granitic gneiss coarse gravel; 1 percent subrounded granitic gneiss stones; strongly acid (pH—5.3); clear wavy boundary.

Bw2—8 to 16 inches; strong brown (7.5YR 4/6) gravelly sandy loam; weak medium and fine subangular blocky structure; friable; common medium and few coarse roots; 19 percent subrounded granitic gneiss coarse gravel; 5 percent subrounded granitic gneiss cobbles; 1 percent subrounded granitic gneiss stones; strongly acid (pH—5.3); abrupt wavy boundary.

2R—16 inches; hard granitic gneiss bedrock.

### Range in Characteristics

*Thickness of solum:* 10 to 20 inches

*Depth to bedrock:* 10 to 20 inches

*Rock fragments:* 5 to 35 percent by volume

*Reaction:* very strongly acid through moderately acid where unlimed

*O horizon, where present:*

Color—black

Texture—slightly to highly decomposed woody plant material

*A horizon:*

Color—hue of 7.5YR or 10YR, value of 2 to 4, and chroma of 1 to 3

Texture—loam in the fine earth fraction

*BA horizon:*

Color—hue of 7.5YR to 2.5Y, value of 4 or 5, and chroma of 3 to 6

Texture—sandy loam, fine sandy loam, or loam in the fine earth fraction

*Bw horizon:*

Color—hue of 7.5YR to 2.5Y, value of 4 or 5, and chroma of 3 to 6

Texture—sandy loam, fine sandy loam, or loam in the fine earth fraction

*2R horizon:*

Hard granitic gneiss bedrock

### Hoosic Taxadjunct

*Depth class:* very deep

*Drainage class:* somewhat excessively drained

*Permeability:* moderately rapid or rapid in the surface layer and subsoil, very rapid in the substratum

*Parent material:* glaciofluvial deposits derived from sandstone and shale and/or conglomerate

*Landscape:* outwash plains

*Landform:* valley trains

*Associated soils:* Colonie; Hazen; Hero; Otisville; Urban land

*Slope range:* 0 to 60 percent

**Taxonomic class:** Sandy-skeletal, mixed, mesic Humic Dystrudepts

### Typical Pedon

HdxAb—Hazen-Hoosic complex, 0 to 3 percent slopes, very stony; Sandyston Township, Sussex County, Flatbrook-Roy Wildlife Management Area, 3,000 feet west of intersection of Route 615 and Route 521, 300 feet south of Route 615, in a wooded abandoned cropfield; USGS Culvers Gap, NJ topographic quadrangle; lat. 41 degrees 11 minutes 49 seconds N. and long. 74 degrees 49 minutes 45 seconds W. NAD83.

Oi—0 to 1 inch; black (10YR 2/1) slightly decomposed woody plant material.

Ap—1 to 9 inches; dark brown (7.5YR 3/3) gravelly loam (7.5YR 4/3, dry); moderate medium and fine subangular blocky structure; very friable; many fine, common medium, and few coarse roots; 15 percent rounded red and gray sandstone and gray conglomerate coarse gravel; 10 percent rounded red and gray sandstone and gray conglomerate medium gravel; 5 percent rounded red and gray sandstone and gray conglomerate fine gravel; very strongly acid (pH—5.0); abrupt wavy boundary.

Bw—9 to 21 inches; strong brown (7.5YR 4/6) very gravelly coarse sandy loam; moderate medium and weak fine subangular blocky structure; friable; common fine and few coarse roots; 20 percent rounded red and gray sandstone and gray conglomerate coarse gravel; 15 percent rounded red and gray sandstone and gray conglomerate cobbles; 15 percent rounded red and gray sandstone and gray conglomerate medium gravel; 5 percent rounded red and gray sandstone and gray conglomerate fine gravel; very strongly acid (pH—5.0); clear irregular boundary.

2C1—21 to 27 inches; dark brown (7.5YR 3/4) extremely gravelly loamy coarse sand; massive; very friable; few fine and medium roots; 20 percent rounded red and gray sandstone and gray conglomerate cobbles; 20 percent rounded red and gray sandstone and gray conglomerate coarse gravel; 15 percent rounded red and gray sandstone and gray conglomerate medium gravel; 10 percent rounded red and gray sandstone and gray conglomerate fine gravel; strongly acid (pH—5.2); clear irregular boundary.

2C2—27 to 37 inches; dark brown (7.5YR 3/4) extremely gravelly coarse sand; single-grain; loose; few fine and medium roots; 20 percent rounded red and gray sandstone and gray conglomerate coarse gravel; 20 percent rounded red and gray sandstone and gray conglomerate medium gravel; 15 percent rounded red and gray sandstone and gray conglomerate cobbles; 10 percent rounded red and gray sandstone and gray conglomerate stones; 5 percent rounded red and gray sandstone and gray conglomerate fine gravel; strongly acid (pH—5.4); clear irregular boundary.

2C3—37 to 49 inches; dark yellowish brown (10YR 4/4) extremely gravelly coarse sand; single-grain; loose; few fine and medium roots; 30 percent rounded red and gray sandstone and gray conglomerate fine gravel; 20 percent rounded red and gray sandstone and gray conglomerate medium gravel; 15 percent rounded red and gray sandstone and gray conglomerate cobbles; 5 percent rounded red and

gray sandstone and gray conglomerate coarse gravel; strongly acid (pH—5.4); clear irregular boundary.

2C4—49 to 60 inches; dark yellowish brown (10YR 4/4) extremely gravelly coarse sand; single-grain; loose; few fine and medium roots; 20 percent rounded red and gray sandstone and gray conglomerate cobbles; 20 percent rounded red and gray sandstone and gray conglomerate fine gravel; 15 percent rounded red and gray sandstone and gray conglomerate medium gravel; 10 percent rounded red and gray sandstone and gray conglomerate stones; 10 percent rounded red and gray sandstone and gray conglomerate coarse gravel; moderately acid (pH—5.6).

### Range in Characteristics

*Thickness of solum:* 14 to 36 inches

*Depth to bedrock:* greater than 60 inches

*Rock fragments:* 10 to 35 percent by volume in the A horizon, 20 to 50 percent by volume in the Bw horizon, 35 to 75 percent by volume in the 2C horizon

*Reaction:* very strongly acid or strongly acid above 30 inches, very strongly acid through slightly acid below 30 inches where unlimed; in some pedons, reaction increases to slightly alkaline below 84 inches

*O horizon, where present:*

Color—black

Texture—slightly decomposed plant material

*A horizon:*

Color—hue of 7.5YR to 2.5Y, value of 3 to 5, and chroma of 2 or 3

Texture—loam in the fine earth fraction

*Bw horizon:*

Color—hue of 5YR to 2.5Y, value of 4 or 5, and chroma of 3 to 6

Texture—coarse sandy loam to loam in the fine earth fraction above depths of 10 to 25 inches; coarse sand, sand, loamy coarse sand, loamy sand, or loamy fine sand in the fine earth fraction below 25 inches

*2C horizon:*

Color—hue of 7.5YR to 2.5Y, value of 3 to 5, and chroma of 2 to 4

Texture—coarse sand, sand, loamy coarse sand, or loamy sand in the fine earth fraction

**Note:** Hoosic is being mapped as a taxadjunct to the series due to a surface layer that is thicker and has a lower color value, dry, than is allowed in the range in characteristics for the Hoosic series.

In some parts of the Kittatinny Valley, the Hoosic taxadjunct has throughout its profile a percentage of rounded limestone and/or rounded granitic gneiss rock fragments.

## Lackawanna Series

*Depth class:* very deep

*Drainage class:* well drained

*Permeability:* moderate above the fragipan, slow in the fragipan

*Parent material:* coarse-loamy till derived from red shale and/or red sandstone and siltstone

*Landscape:* mountains

*Landform:* ground moraines

*Associated soils:* Oquaga, Rock outcrop, Wellsboro

*Slope range:* 0 to 35 percent

**Taxonomic class:** Coarse-loamy, mixed, active, mesic Typic Fragiudepts

### Typical Pedon

LacCc—Lackawanna cobbly fine sandy loam, 8 to 15 percent slopes, extremely stony; Pahaquarry County, Warren County, Delaware Water Gap National Recreation Area, 3,168 feet west of the intersection of Brink Road and County Route 602, 400 feet north of Brink Road, in a wooded area on the shoulder of Kittatinny Mountain; USGS Flatbrookville topographic quadrangle; lat. 41 degrees 3 minutes 45.59 seconds N. and long. 74 degrees 58 minutes 20.00 seconds W. NAD83.

Oi—0 to 2 inches; black (10YR 2/1) slightly decomposed organic material.

A—2 to 3 inches; black (5YR 2.5/1) cobbly fine sandy loam; weak fine granular structure; friable; many fine and medium roots; 9 percent subangular red and gray sandstone cobbles; 6 percent subangular red and gray sandstone stones; 5 percent subangular red and gray sandstone coarse gravel; extremely acid (pH—4.2); abrupt irregular boundary.

E—3 to 7 inches; pinkish gray (5YR 6/2) cobbly fine sandy loam; weak medium subangular blocky structure parting to weak medium granular; friable; common fine and medium roots; 9 percent subangular red and gray sandstone cobbles; 6 percent subangular red and gray sandstone stones; 5 percent subangular red and gray sandstone coarse gravel; extremely acid (pH—4.2); abrupt irregular boundary.

Bhs—7 to 8 inches; dusky red (2.5YR 3/2) cobbly fine sandy loam; moderate medium subangular blocky structure; friable; common fine and medium roots; 9 percent subangular red and gray sandstone cobbles; 7 percent subangular red and gray sandstone coarse gravel; 6 percent subangular red and gray sandstone stones; extremely acid (pH—4.4); abrupt broken boundary.

Bw1—8 to 16 inches; reddish brown (5YR 5/4) stony loam; moderate medium subangular blocky structure; friable; common fine, medium, and coarse roots; 10 percent subangular red and gray sandstone coarse gravel; 7 percent subangular red and gray sandstone cobbles; 5 percent subangular red and gray sandstone stones; strongly acid (pH—5.3); clear smooth boundary.

Bw2—16 to 24 inches; reddish brown (5YR 5/4) stony loam; moderate medium platy structure; firm; common fine roots; 10 percent subangular red and gray sandstone coarse gravel; 7 percent subangular red and gray sandstone cobbles; 5 percent subangular red and gray sandstone stones; strongly acid (pH—5.3); clear smooth boundary.

Bx1—24 to 29 inches; dusky red (2.5YR 4/4) stony fine sandy loam; few medium faint weak red (2.5YR 5/2) iron depletions with clear boundaries on vertical faces of prisms; strong medium platy structure; very firm; brittle; few faint patchy dusky red (2.5YR 4/4) clay films on surfaces along pores; 20 percent subangular red and gray sandstone coarse gravel; 7 percent subangular red and gray sandstone cobbles; 5 percent subangular red and gray sandstone stones; strongly acid (pH—5.3); clear smooth boundary.

Bx2—29 to 60 inches; dusky red (2.5YR 4/3) very cobbly fine sandy loam; common medium faint weak red (2.5YR 5/2) iron depletions with clear boundaries on vertical faces of prisms; strong medium platy structure; very firm; brittle; few faint patchy dusky red (2.5YR 4/4) clay films on surfaces along pores; 20 percent subangular red and gray sandstone coarse gravel; 15 percent subangular red and gray sandstone cobbles; 10 percent subrounded red and gray sandstone stones; strongly acid (pH—5.3).

### Range in Characteristics

*Thickness of solum:* 40 to 75 inches or more

*Depth to fragipan:* 17 to 36 inches

*Depth to bedrock:* greater than 60 inches

*Rock fragments:* 10 to 40 percent by volume in the A, E, Bhs, and Bw horizons; 15 to 65 percent in the Bx and C horizons

*Reaction:* extremely acid to strongly acid where unlimed

*O horizon, where present:*

Color—black

Texture—slightly or moderately decomposed plant material

*A horizon:*

Color—hue of 5YR to 10YR, value of 2 to 4, and chroma of 1 to 3

Texture—fine sandy loam in fine earth fraction

*E horizon:*

Color—hue of 5YR to 10YR, value of 3 to 6, and chroma of 2 or 3

Texture—fine sandy loam in the fine earth fraction

*Bhs horizon*

Color—hue of 5YR to 10YR, value of 3, and chroma of 2 or 3

Texture—fine sandy loam in the fine earth fraction

*Bw horizon*

Color—hue of 2.5YR to 10YR, value of 4 or 5, and chroma of 3 to 6

Texture—fine sandy loam, loam, or silt loam in the fine earth fraction

*Bx horizon*

Color—hue of 10R to 5YR, value of 3 to 5, and chroma of 2 to 4

Texture—sandy loam, loam, fine sandy loam or silt loam in the fine earth fraction

Redoximorphic features—iron depletions in shades of gray and iron accumulations in shades of red

## Lordstown Series

*Depth class:* moderately deep

*Drainage class:* well drained

*Permeability:* moderate

*Parent material:* coarse-loamy till derived from conglomerate

*Landscape:* mountains

*Landform:* ground moraines and ridges

*Associated soils:* Arnot, Cambridge, Chadakoin, Rock outcrop, Wallpack

*Slope range:* 0 to 60 percent

**Taxonomic class:** Coarse-loamy, mixed, active, mesic Typic Dystrudepts

### Typical Pedon

AruCh—Arnot-Lordstown complex, 0 to 15 percent slopes, very rocky; Sandyston Township, Sussex County, Stokes State Forest, 3,800 feet northeast of the intersection of Route 636 and Sunrise Mountain Road, 1,650 feet southeast of Sunrise Mountain Road, in a wooded area on the summit of Kittatinny Mountain; USGS Culvers Gap, NJ topographic quadrangle; lat. 41 degrees 11 minutes 00 seconds N. and long. 74 degrees 46 minutes 41 seconds W. NAD83.

Oi—0 to 1 inch; black (10YR 2/1) slightly decomposed woody plant material.

A—1 to 2 inches; black (10YR 2/1) loam (10YR 5/1, dry); weak fine granular structure; very friable; many fine and few medium roots; very strongly acid(pH—4.8); abrupt wavy boundary.

E—2 to 3 inches; dark grayish brown (10YR 4/2) fine sandy loam; weak fine granular structure; friable; common fine and few medium roots; very strongly acid (pH—4.8); abrupt wavy boundary.



- Bw1—3 to 5 inches; dark yellowish brown (10YR 3/4) loam; weak medium subangular blocky structure; friable; common fine and few medium roots; 10 percent subrounded red and gray sandstone medium gravel; very strongly acid (pH—4.8); abrupt wavy boundary.
- Bw2—5 to 17 inches; yellowish brown (10YR 5/6) gravelly loam; weak medium and fine subangular blocky structure; friable; common fine and few medium roots; 15 percent subrounded red and gray sandstone and quartzite medium gravel; 5 percent subrounded red and gray sandstone and quartzite coarse gravel; very strongly acid (pH—5.0); clear wavy boundary.
- Bw3—17 to 22 inches; yellowish brown (10YR 5/6) gravelly loam; moderate medium and fine subangular blocky structure; friable; common fine and few medium roots; 15 percent subrounded red and gray sandstone and quartzite coarse gravel; 10 percent subrounded red and gray sandstone and quartzite medium gravel; very strongly acid (pH—5.0); clear wavy boundary.
- C—22 to 36 inches; yellowish brown (10YR 5/4) very gravelly fine sandy loam; structureless; massive; firm; 30 percent subrounded red and gray sandstone and quartzite coarse gravel; 20 percent subrounded red and gray sandstone and quartzite medium gravel; strongly acid (pH—5.2); abrupt wavy boundary.
- 2R—36 inches; hard gray sandstone and quartzite bedrock.

### Range in Characteristics

*Thickness of solum:* 20 to 40 inches

*Depth to bedrock:* 20 to 40 inches

*Rock fragments:* 0 to 35 percent by volume in the A and E horizons, 20 to 60 percent by volume in the Bw and C horizons

*Reaction:* very strongly acid through moderately acid in the A, E and Bw horizons, strongly acid or moderately acid in the C horizon where unlimed

*O horizon, where present*

Color—black

Texture—slightly decomposed woody plant material

*A horizon:*

Color—hue of 7.5YR to 2.5Y, value of 3 to 5, and chroma of 1 to 4

Texture—loam in the fine earth fraction

*E horizon:*

Color—hue of 7.5YR or 10YR, value of 4 or 5, and chroma of 2 or 3

Texture—fine sandy loam in the fine earth fraction

*Bw horizon:*

Color—hue of 7.5YR to 2.5Y, value of 4 to 6, and chroma of 3 to 6

Texture—loam or silt loam in the fine earth fraction

*C horizon:*

Color—hue of 7.5YR to 5Y, value of 3 to 6, and chroma of 2 to 4

Texture—fine sandy loam to silt loam in the fine earth fraction

*2R horizon:*

Hard gray or red sandstone, quartzite, or conglomerate bedrock

## Manlius Series

*Depth class:* moderately deep

*Drainage class:* well drained

*Permeability:* moderate or moderately rapid

*Parent material:* loamy till derived from acid shale

*Landscape:* till plains

*Landform:* ground moraines and ridges

*Associated soils:* Nassau; Urban land; Rock outcrop; Wallpack

*Slope range:* 0 to 60 percent

**Taxonomic class:** Loamy-skeletal, mixed, active, mesic Typic Dystrudepts

### Typical Pedon

NauBh—Nassau-Manlius complex, 0 to 8 percent slopes, extremely stony; Fredon Township, Sussex County, Paulinskill Wildlife Management Area, 3,000 feet west of parking lot off Route 622, in a hayfield; USGS Newton West, NJ topographic quadrangle; lat. 41 degrees 03 minutes 43 seconds N. and long. 74 degrees 48 minutes 10 seconds W. NAD83.

Ap—0 to 9 inches; brown (10YR 4/3) very channery silt loam (2.5Y 5/3, dry); moderate medium and fine subangular blocky structure; very friable; many fine roots; 40 percent slate and shale channers; neutral (pH—7.0); abrupt smooth boundary.

Bw—9 to 20 inches; yellowish brown (10YR 5/4) extremely channery silt loam; weak fine subangular blocky structure; friable; common fine roots; 65 percent slate and shale channers; slightly acid (pH—6.4); clear wavy boundary.

CB—20 to 29 inches; dark yellowish brown (10YR 4/6) extremely channery silt loam; massive; firm; 70 percent slate and shale channers; slightly acid (pH—6.4); abrupt wavy boundary.

2R—29 inches; vertically tilted soft gray slate and shale bedrock.

### Range in Characteristics

*Thickness of solum:* 15 to 35 inches

*Depth to bedrock:* 20 to 40 inches

*Rock fragments:* 15 to 40 percent by volume in the A horizon, 25 to 65 percent by volume in the Bw horizon, 30 to 70 percent by volume in the CB horizon ([fig. 12](#))

*Reaction:* slightly acid to neutral in the A and Bw horizons, very strongly acid to slightly acid in the CB horizon; extremely acid through moderately acid in the A and Bw horizons where unlimed

*O horizon, where present:*

Color—black or brown

Texture—slightly decomposed woody plant material

*A horizon:*

Color—hue of 7.5YR to 2.5Y, value of 3 or 4, and chroma of 2 or 3

Texture—silt loam in the fine earth fraction

*Bw horizon:*

Color—hue of 10YR to 5Y, value of 4 to 6, and chroma of 3 to 6

Texture—loam or silt loam in the fine earth fraction

*CB horizon:*

Color—hue of 10YR to 5Y, value of 4 or 5, and chroma of 2 to 6

Texture—loam or silt loam in the fine earth fraction

*2R horizon:*

Hard or soft gray slate and shale bedrock

## Nassau Series

*Depth class:* shallow

*Drainage class:* somewhat excessively drained



Figure 12.—A profile of Manlius soils. These moderately deep, well drained soils formed in till from slate and shale bedrock, and have soil textures dominated by high percentages of slate and shale rock fragments. The numbers on the tape indicate depth in inches.

*Permeability:* moderate or moderately rapid

*Parent material:* loamy till derived from acid shale

*Landscape:* till plains

*Landform:* ground moraines and ridges

*Associated soils:* Manlius; Rock outcrop; Urban land; Wallpack

*Slope range:* 0 to 60 percent

**Taxonomic class:** Loamy-skeletal, mixed, active, mesic Lithic Dystrudepts

#### Typical Pedon

NauBh—Nassau-Manlius complex, 0 to 8 percent slopes, extremely stony; Fredon Township, Sussex County, Paulinskill Wildlife Management Area; 3,000 feet west of

parking lot off Route 622, in a hayfield; USGS Newton West, NJ topographic quadrangle; lat. 41 degrees 03 minutes 43 seconds N. and long. 74 degrees 48 minutes 10 seconds W. NAD83.

Ap—0 to 7 inches; brown (10YR 4/3) very channery silt loam (2.5Y 5/3, dry); weak fine granular structure; very friable; many fine roots; 35 percent slate and shale channers; neutral (pH—7.0); abrupt smooth boundary.

Bw—7 to 13 inches; yellowish brown (10YR 5/4) extremely channery silt loam; weak fine subangular blocky structure; friable; many fine roots; 70 percent slate and shale channers; slightly acid (pH—6.4); clear wavy boundary.

2R—13 inches; vertically tilted soft gray slate and shale bedrock.

### Range in Characteristics

*Thickness of solum:* 10 to 20 inches

*Depth to bedrock:* 10 to 20 inches

*Rock fragments:* 10 to 50 percent by volume in the A horizon, 35 to 70 percent by volume in the Bw horizon

*Reaction:* slightly acid to neutral in the A and Bw horizons; very strongly acid or strongly acid in the A horizon, very strongly acid through moderately acid in the Bw horizon where unlimed

*O horizon, where present:*

Color—black

Texture—slightly decomposed woody plant material

*A horizon:*

Color—hue of 7.5YR to 2.5Y, value of 3 to 5, and chroma of 2 or 3

Texture—silt loam in the fine earth fraction

*Bw horizon:*

Color—hue of 7.5YR to 2.5Y, value of 4 or 5, and chroma of 3 to 6

Texture—loam or silt loam in the fine earth fraction

*2R horizon:*

Hard or soft gray slate and shale bedrock

## Oquaga Series

*Depth class:* moderately deep

*Drainage class:* somewhat excessively drained

*Permeability:* moderate

*Parent material:* loamy till derived from red sandstone and siltstone and/or red shale

*Landscape:* mountains

*Landform:* ground moraines

*Associated soils:* Arnot, Lackawanna, Rock outcrop, Wellsboro

*Slope range:* 0 to 60 percent

**Taxonomic class:** Loamy-skeletal, mixed, superactive, mesic Typic Dystrudepts

### Typical Pedon

OpnDh—Oquaga-Lackawanna complex, 15 to 35 percent slopes, very rocky; Walpack Township, Sussex County, Delaware Water Gap National Recreation Area, 3,062 feet north of the parking lot for Blue Mountain Lakes, 50 feet southeast of the main trail above Blue Mountain Lakes, in a wooded area; USGS Flatbrookville topographic quadrangle; lat. 41 degrees 6 minutes 15.21 seconds N. and long. 74 degrees 55 minutes 40.58 seconds W. NAD83.

- Oi—0 to 1 inch; black (10YR 2/1) slightly decomposed organic material.
- A—1 to 4 inches; very dark brown (7.5YR 2.5/2) channery loam; weak fine granular structure; very friable; many fine and common medium roots; 17 percent red and gray sandstone channers; very strongly acid (pH—4.6); abrupt wavy boundary.
- Bw—4 to 20 inches; brown (7.5YR 4/4) very channery loam; weak medium subangular blocky structure; friable; common fine and medium roots; 40 percent red and gray sandstone channers; very strongly acid (pH—4.8); clear wavy boundary.
- C—20 to 25 inches; brown (7.5YR 4/4) extremely channery loam; massive; friable; few fine and common coarse roots; 70 percent red and gray sandstone channers; very strongly acid (pH—4.8); abrupt wavy boundary.
- 2R—25 inches; fractured red sandstone bedrock.

### Range in Characteristics

*Depth to bedrock:* 20 to 40 inches

*Rock fragments:* 15 to 60 percent by volume in the A horizon, 25 to 85 percent by volume in the Bw and C horizons

*Reaction:* extremely acid to strongly acid where unlimed

*O horizon, where present:*

Color—black or brown

Texture—slightly or moderately decomposed plant material

*A horizon:*

Color—hue of 2.5YR to 10YR, value of 2 to 5, and chroma of 1 to 3

Texture—loam in the fine earth fraction

*Bw horizon:*

Color—hue of 2.5YR to 7.5YR, value of 3 to 6, and chroma of 3 to 8

Texture—fine sandy loam, loam, or silt loam in the fine earth fraction

*C horizon:*

Color—hue of 10R to 7.5YR, value of 3 to 5, and chroma of 2 to 4

Texture is sandy loam, fine sandy loam, loam, or silt loam in the fine earth fraction

*2R horizon:*

Hard red sandstone and shale bedrock

## Otisville Series

*Depth class:* very deep

*Drainage class:* excessively drained

*Permeability:* rapid in the surface layer and subsoil, rapid or very rapid in the substratum

*Parent material:* glaciofluvial deposits derived from sandstone and shale and/or conglomerate ([fig. 13](#))

*Landscape:* outwash plains

*Landform:* valley trains

*Associated soils:* Hazen, Hoosic

*Slope range:* 0 to 60 percent

**Taxonomic class:** Sandy-skeletal, mixed, mesic Typic Udorthents

### Typical Pedon

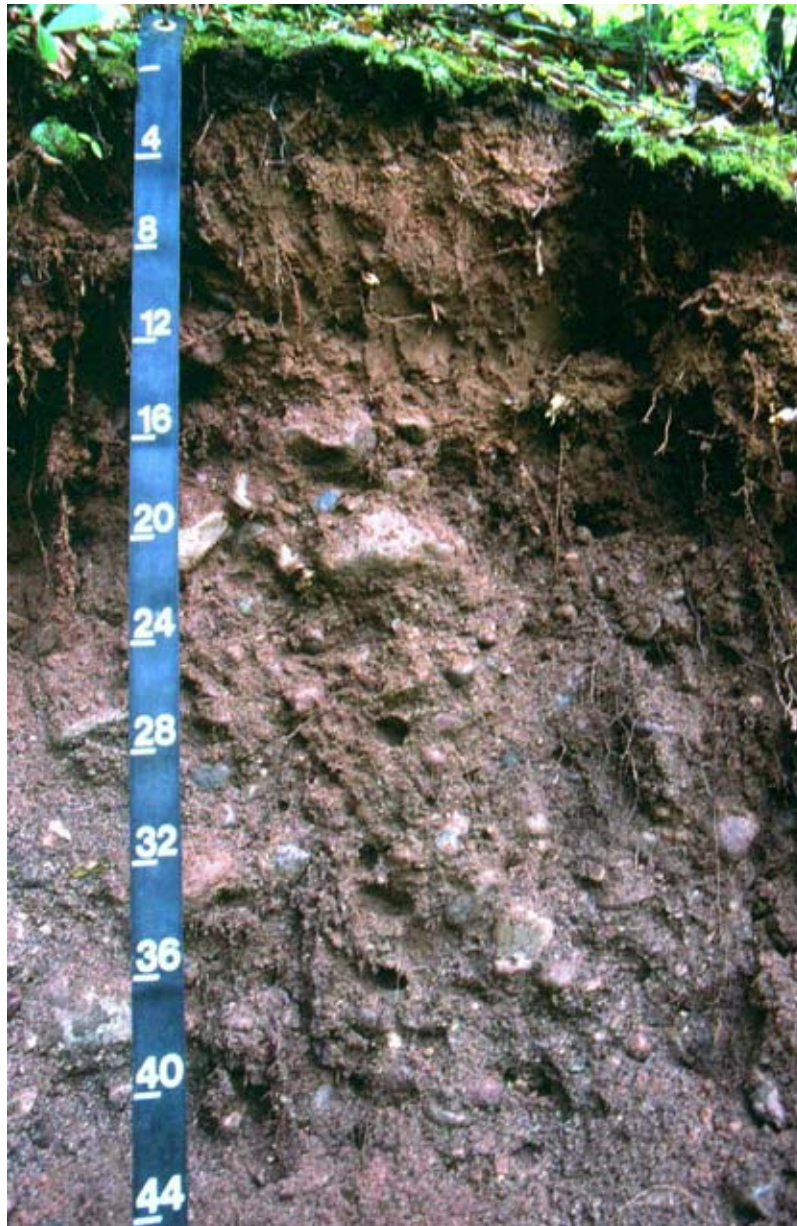
HopEb—Hoosic-Otisville complex, 25 to 60 percent slopes, very stony; Wallpack Township, Sussex County, Flatbrook-Roy Wildlife Management Area, 4,400 feet north



of intersection of Mountain Road and Tillman Road, 700 feet northwest of Mountain Road, in a wooded area; USGS Culvers Gap, NJ topographic quadrangle; lat. 41 degrees 10 minutes 10 seconds N. and long. 74 degrees 51 minutes 44 seconds W. NAD83.

Oi—0 to 1 inch; black (10YR 2/1) slightly decomposed woody plant material.

A—1 to 2 inches; very dark grayish brown (10YR 3/2) gravelly sandy loam (10YR 4/2, dry); moderate medium and weak fine granular structure; friable; many fine and medium roots; 20 percent rounded red and gray sandstone and gray conglomerate medium gravel; 5 percent rounded red and gray sandstone and



**Figure 13.—A profile of Otisville soils. These very deep, excessively drained soils formed in glaciofluvial deposits dominated by sandstone, conglomerate and shale, and have soil textures dominated by high sand contents and by high percentages of rock fragments. The numbers on the tape indicate depth in inches.**

gray conglomerate coarse gravel; 5 percent rounded red and gray sandstone and gray conglomerate fine gravel; very strongly acid (pH—4.8); abrupt wavy boundary.

- Bw1—2 to 7 inches; brown (10YR 4/3) very gravelly loamy sand; moderate medium and weak fine subangular blocky structure; friable; common fine and medium roots; 25 percent rounded red and gray sandstone and gray conglomerate medium gravel; 10 percent rounded red and gray sandstone and gray conglomerate fine gravel; 5 percent rounded red and gray sandstone and gray conglomerate cobbles; 5 percent rounded red and gray sandstone and gray conglomerate coarse gravel; very strongly acid (pH—5.0); clear wavy boundary.
- Bw2—7 to 11 inches; dark yellowish brown (10YR 4/4) very gravelly loamy coarse sand; moderate medium and fine subangular blocky structure; friable; common fine and few medium roots; 20 percent rounded red and gray sandstone and gray conglomerate coarse gravel; 10 percent rounded red and gray sandstone and gray conglomerate medium gravel; 5 percent rounded red and gray sandstone and gray conglomerate cobbles; 5 percent rounded red and gray sandstone and gray conglomerate fine gravel; strongly acid (pH—5.2); clear wavy boundary.
- BC—11 to 19 inches; yellowish brown (10YR 5/4) very gravelly loamy coarse sand; weak medium and fine subangular blocky structure; very friable; common fine and few medium roots; 20 percent rounded red and gray sandstone and gray conglomerate medium gravel; 10 percent rounded red and gray sandstone and gray conglomerate coarse gravel; 10 percent rounded red and gray sandstone and gray conglomerate fine gravel; 5 percent rounded red and gray sandstone and gray conglomerate cobbles; strongly acid (pH—5.2); clear wavy boundary.
- C1—19 to 31 inches; dark yellowish brown (10YR 4/4) extremely gravelly coarse sand; single-grain; loose; few fine and medium roots; 25 percent rounded red and gray sandstone and gray conglomerate coarse gravel; 15 percent rounded red and gray sandstone and gray conglomerate fine gravel; 10 percent rounded red and gray sandstone and gray conglomerate cobbles; 5 percent rounded weathered limestone cobbles; 5 percent rounded red and gray sandstone and gray conglomerate medium gravel; strongly acid (pH—5.2); clear irregular boundary.
- C2—31 to 43 inches; dark yellowish brown (10YR 4/4) extremely gravelly coarse sand; single-grain; loose; few fine roots; 25 percent rounded red and gray sandstone and gray conglomerate fine gravel; 20 percent rounded red and gray sandstone and gray conglomerate coarse gravel; 15 percent rounded red and gray sandstone and gray conglomerate medium gravel; 5 percent rounded red and gray sandstone and gray conglomerate cobbles; 5 percent weathered limestone cobbles; strongly acid (pH—5.4); clear wavy boundary.
- C3—43 to 60 inches; stratified 85 percent brown (10YR 5/3) sand; 15 percent brown (7.5YR 4/4) loamy sand; massive; very friable; few fine roots; very strongly acid (pH—5.0).

### Range in Characteristics

*Thickness of solum:* 14 to 35 inches

*Depth to bedrock:* greater than 60 inches

*Rock fragments:* 0 to 40 percent by volume in the A horizons, 20 to 75 percent by volume in the Bw horizon, 30 to 70 percent by volume in the C horizon

*Reaction:* extremely acid to slightly acid in the A and Bw horizons, very strongly acid to moderately acid in the C horizon where unlimed

*O horizon, where present:*

Color—black

Texture—slightly decomposed woody plant material

*A horizon:*

Color—hue of 7.5YR or 10YR, value of 3 or 4, and chroma of 2 to 4  
 Texture—sandy loam in the fine earth fraction

*Bw horizon:*

Color—hue of 5YR to 2.5Y, value of 4 or 5, and chroma of 3 to 6  
 Texture—coarse sand to loamy fine sand in the fine earth fraction

*C horizon:*

Color—hue of 7.5YR to 2.5Y, value of 3 to 6, and chroma of 2 to 4  
 Texture—coarse sand to loamy sand in the fine earth fraction

## Pompton Series

*Depth class:* deep

*Drainage class:* somewhat poorly drained

*Permeability:* moderately rapid in the surface layer and subsoil, rapid or very rapid in the substratum

*Parent material:* coarse-loamy outwash derived from gneiss, sandstone and basalt

*Landscape:* delta plains

*Landform:* outwash plains

*Associated soils:* Horseneck, Preakness

*Slope range:* 0 to 3 percent

**Taxonomic class:** Coarse-loamy, mixed, active, mesic Aquic Dystrudepts

### Typical Pedon

PohA—Pompton sandy loam, 0 to 3 percent slopes; Fairfield Township, Essex County, in a wooded area off Big Piece Road; USGS Pompton Plains quadrangle; latitude 40 degrees 53 minutes 12.45 seconds N., longitude 74 degrees 18 minutes 45.15 seconds W. NAD83.

Oe—0 to 2 inches; moderately decomposed plant material; strongly acid.

Oa—2 to 4 inches; highly decomposed plant material; strongly acid.

A—4 to 8 inches; very dark grayish brown (10YR 3/2) sandy loam; weak fine granular structure; very friable; common fine roots throughout; very strongly acid; clear wavy boundary.

Bw1—8 to 15 inches; dark yellowish brown (10YR 4/4) sandy loam; moderate fine subangular blocky structure parting to moderate medium subangular blocky; friable; many fine and common medium roots throughout; strongly acid; clear wavy boundary.

Bw2—15 to 20 inches; light olive brown (2.5Y 5/4) sandy loam; moderate medium subangular blocky structure; very friable; common fine roots throughout; 10 percent medium distinct light gray (2.5Y 7/2) iron depletions throughout; 10 percent medium prominent yellowish brown (10YR 5/6) iron-manganese masses throughout; strongly acid; clear wavy boundary.

Bw3—20 to 24 inches; light yellowish brown (2.5Y 6/3) loamy sand; moderate medium subangular blocky structure; friable; 30 percent medium prominent yellowish brown (10YR 5/6) iron-manganese masses throughout; 10 percent medium distinct light gray (2.5Y 7/1) iron depletions throughout; strongly acid; clear wavy boundary.

Bw4—24 to 32 inches; light olive brown (2.5Y 5/3) sandy loam; moderate medium subangular blocky structure; friable; 20 percent medium distinct light gray (2.5Y 7/1) iron depletions throughout; 20 percent coarse prominent brown (7.5YR 4/4) iron-manganese masses throughout; strongly acid; clear wavy boundary.



- BC—32 to 40 inches; dark yellowish brown (10YR 4/4) loamy sand; weak medium subangular blocky structure; friable; 10 percent medium distinct dark yellowish brown (10YR 4/6) iron-manganese masses throughout; 1 percent medium distinct grayish brown (10YR 5/2) iron depletions throughout; very strongly acid; clear wavy boundary.
- C1—40 to 47 inches; grayish brown (2.5Y 5/2) sand; single grain; loose; 15 percent medium distinct dark yellowish brown (10YR 4/4) iron-manganese masses throughout; very strongly acid; gradual wavy boundary.
- C2—47 to 60 inches; dark yellowish brown (10YR 4/6) fine sand; single grain; loose; very strongly acid.

### Range in Characteristics

*Thickness of solum:* 24 to 40 inches or more

*Depth to bedrock:* greater than 60 inches

*Rock fragments:* 0 to 35 percent by volume in the A and B horizons; 0 to 70 percent by volume in the C horizon

*Reaction:* very strongly acid to strongly acid where unlimed

*O horizon:*

Color—black to brown

Texture—slightly to moderately decomposed plant material

*A horizon:*

Color—hue of 7.5YR or 10YR, value of 3 or 4, and chroma of 2 or 3

Texture—sandy loam in the fine earth fraction

*Bw horizon:*

Color—hue of 7.5YR or 2.5Y, value of 4 to 6, and chroma of 3 to 6

Texture—fine sandy loam or sandy loam in the fine earth fraction

Redoximorphic features - iron depletions in shades of gray to yellowish brown and iron concentrations in shades of brownish yellow to dark yellowish brown

*BC horizon:*

Color—hue of 7.5YR or 2.5Y, value of 4 to 6, and chroma of 3 to 6

Texture—sandy loam or loamy sand in the fine earth fraction

Redoximorphic features—iron depletions in shades of grayish brown and iron concentrations in shades of dark yellowish brown

*C horizon:*

Color—hue of 7.5YR or 5Y, value of 4 to 6, and chroma of 2 to 6

Texture—sand to sandy loam in the fine earth fraction

Redoximorphic features—iron concentrations in shades of dark yellowish brown

## Riverhead Series

*Depth class:* very deep

*Drainage class:* well drained

*Permeability:* moderately rapid in the surface layer and subsoil, very rapid in the substratum

*Parent material:* glaciofluvial deposits derived from granite and gneiss

*Landscape:* outwash plains

*Landform:* outwash fans

*Associated soils:* Hinckley, Horseneck

*Slope range:* 0 to 8 percent

**Taxonomic class:** Coarse-loamy, mixed, active, mesic Typic Dystrudepts

### Typical Pedon

RkrB—Riverhead sandy loam, 3 to 8 percent slopes; Byram Township, Sussex County, Allamuchy Mountain State Park, 2,800 feet northeast of the intersection of County Route 604 and Jefferson Lake Road, 1,300 feet east of the east shore of Jefferson Lake, in a wooded area; USGS Stanhope topographic quadrangle; lat. 40 degrees 55 minutes 36.9 seconds N., and long. 74 degrees 43 minutes 38.55 seconds W. NAD83.

Ap—0 to 13 inches; dark yellowish brown (10YR 3/4) sandy loam; weak medium granular structure; friable; many fine and common medium roots; 3 percent subrounded granitic gneiss medium gravel; very strongly acid (pH—4.6); clear smooth boundary.

Bw1—13 to 23 inches; yellowish brown (10YR 5/6) sandy loam; moderate medium subangular blocky structure; friable; many fine and common medium roots; 5 percent subrounded granitic gneiss medium gravel; very strongly acid (pH—4.8); gradual wavy boundary.

Bw2—23 to 33 inches; yellowish brown (10YR 5/6) gravelly sandy loam; moderate medium subangular blocky structure; friable; 15 percent subrounded granitic gneiss medium gravel; strongly acid (pH—5.3); clear smooth boundary.

2C1—33 to 41 inches; light yellowish brown (2.5Y 6/4) sand; single-grain; loose; few medium prominent dark yellowish brown (10YR 3/4) iron accumulations with clear boundaries in the matrix; very strongly acid (pH—5.0); gradual wavy boundary.

2C2—41 to 60 inches; light yellowish brown (2.5Y 6/4) sand; single-grain; loose; common medium prominent dark yellowish brown (10YR 3/4) iron accumulations with clear boundaries in the matrix; very strongly acid (pH—5.0).

### Range in Characteristics

*Thickness of solum:* 20 to 40 inches

*Depth to bedrock:* greater than 60 inches

*Rock fragments:* 0 to 30 percent by volume in the A horizon, 5 to 35 percent by volume in the B horizon, 0 to 40 percent by volume in the C horizon

*Reaction:* extremely acid through strongly acid where unlimed

*O horizon, where present:*

Color—black to brown

Texture—slightly to moderately decomposed plant material

*A horizon:*

Color—hue of 7.5YR to 10YR, value of 2 to 4, and chroma of 1 to 6

Texture—sandy loam in the fine earth fraction

*B horizon:*

Color—hue of 7.5YR to 10YR, value of 3 to 5, and chroma of 3 to 6

Texture—sandy loam or fine sandy loam in the fine earth fraction

*2C horizon:*

Color—hue of 7.5YR to 2.5Y, value of 4 to 7, and chroma of 3 to 6

Texture—sandy loam, loamy sand or sand in the fine earth fraction

Redoximorphic features, where present—iron concentrations in shades of red and brown

### Rockaway Series

*Depth class:* very deep

*Drainage class:* well drained

*Permeability:* moderate above the fragipan, very slow or slow in the fragipan, moderate or moderately rapid in the substratum

*Parent material:* coarse-loamy till derived from granite and gneiss and/or limestone, sandstone, and shale and/or quartzite

*Landscape:* mountains and till plains

*Landform:* ground moraines

*Associated soils:* Chatfield; Hollis; Rockaway, moderately well drained; Urban land

*Slope range:* 0 to 60 percent

**Taxonomic class:** Coarse-loamy, mixed, semiactive, mesic Typic Fragiudults

### Typical Pedon

RokC—Rockaway-Chatfield-Rock outcrop complex, 8 to 15 percent slopes; Vernon Township, Sussex County, Wawayanda State Park, 1,300 feet south of the intersection of Cabin Trail and Cherry Ridge Road, 300 feet west of Cabin Trail, in a wooded area; USGS Wawayanda, NJ-NY topographic quadrangle; lat. 41 degrees 09 minutes 27 seconds N. and long. 74 degrees 26 minutes 49 seconds W. NAD27.

Oi—0 to 2 inches; black (10YR 2/1) slightly decomposed woody plant material.

A—2 to 3 inches; very dark grayish brown (10YR 3/2) loam (10YR 5/2, dry); moderate fine granular structure; very friable; many fine and few medium roots; 5 percent subrounded granitic gneiss fine gravel; very strongly acid (pH—4.8); abrupt wavy boundary.

BA—3 to 6 inches; dark yellowish brown (10YR 4/4) loam; moderate fine and weak medium subangular blocky structure; friable; many fine and few medium and coarse roots; few faint patchy dark yellowish brown (10YR 4/4) clay films on faces of peds and on surfaces along pores; 5 percent subrounded granitic gneiss medium gravel; 5 percent subrounded granitic gneiss fine gravel; very strongly acid (pH—4.8); clear wavy boundary.

Bt—6 to 23 inches; dark yellowish brown (10YR 4/6) gravelly loam; moderate medium subangular blocky structure; friable; few fine and coarse roots; many faint discontinuous dark yellowish brown (10YR 4/6) clay films on faces of peds and on surfaces along pores; 10 percent subrounded granitic gneiss fine gravel; 5 percent subrounded granitic gneiss medium gravel; very strongly acid (pH—5.0); clear wavy boundary.

Bx—23 to 41 inches; dark yellowish brown (10YR 4/4) gravelly sandy loam; moderate very coarse prismatic parting to moderate very coarse platy and moderate medium subangular blocky structure; very firm; brittle; common faint discontinuous dark yellowish brown (10YR 4/4) clay films on faces of peds and around rock fragments; common medium distinct strong brown (7.5YR 4/6) iron accumulations with clear boundaries on vertical faces of prisms; common coarse distinct brown (10YR 5/3) iron depletions with clear boundaries between prisms; common fine and few coarse prominent black (10YR 2/1) manganese concentrations in the matrix; 10 percent subrounded granitic gneiss stones; 10 percent subrounded granitic gneiss fine gravel; 5 percent subrounded weathered limestone coarse gravel; 5 percent subrounded granitic gneiss medium gravel; strongly acid (pH—5.2); clear irregular boundary.

C—41 to 60 inches; 70 percent dark yellowish brown (10YR 4/4) gravelly sandy loam; 30 percent yellowish brown (10YR 5/6) gravelly sandy loam; massive; friable; 10 percent subrounded granitic gneiss fine gravel; 5 percent subrounded granitic gneiss cobbles; 5 percent subrounded weathered limestone coarse gravel; 5 percent subrounded granitic gneiss medium gravel; strongly acid (pH—5.2).

### Range in Characteristics

*Thickness of solum:* 30 to 50 inches

*Depth to bedrock:* greater than 60 inches

*Depth to fragipan:* 18 to 40 inches

*Rock fragments:* 5 to 40 percent by volume in the A, BA, Bt, and Bx horizons; 25 to 65 percent by volume in the C horizon

*Reaction:* very strongly acid or strongly acid where unlimed

*O horizon, where present:*

Color—black

Texture—slightly decomposed woody plant material

*A horizon:*

Color—hue of 7.5YR or 10YR, value of 2 to 4, and chroma of 0 to 4

Texture—loam in the fine earth fraction

*BA horizon:*

Color—hue of 10YR, value of 3 or 4, and chroma of 3 or 4

Texture—loam in the fine earth fraction

*Bt horizon:*

Color—hue of 7.5YR or 10YR, value of 4 or 5, and chroma of 4 to 6

Texture—sandy loam or loam in the fine earth fraction

*Bx horizon:*

Color—hue of 7.5YR to 2.5Y, value of 4 or 5, and chroma of 4 to 6

Texture—sandy loam or loam in the fine earth fraction

In some pedons, the Bx horizon is thinner than what is typical for the Rockaway series.

*C horizon:*

Color—hue of 10YR to 5Y, value of 4 to 6, and chroma of 2 to 6

Texture—sandy loam or loamy sand in the fine earth fraction

## Scio Series

*Depth class:* very deep

*Drainage class:* moderately well drained

*Permeability:* moderate

*Parent material:* post glacial coarse-silty alluvium

*Landscape:* river valleys

*Landform:* inner terraces

*Associated soils:* Aeris Endoaquepts; Unadilla

*Slope range:* 0 to 3 percent

**Taxonomic class:** Coarse-silty, mixed, active, mesic Aquic Dystrudepts

### Typical Pedon

ScoA—Scio silt loam, 0 to 3 percent slopes; Montague Township, Sussex County, Delaware Water Gap National Recreation Area, 3,960 feet northeast of the US Route 206 bridge, 2,000 feet west of County Route 521, 2,600 feet south of terrace entrance road, in an abandoned cropland; USGS Milford, PA-NJ topographic quadrangle; lat. 41 degrees 18 minutes 47.2 seconds N. and long. 74 degrees 47 minutes 20.2 seconds W. NAD83.

Ap1—0 to 6 inches; dark brown (7.5YR 3/3) silt loam; weak fine subangular blocky structure parting to moderate fine granular structure; friable; many fine and medium roots; moderately acid (pH—5.6); clear wavy boundary.

- Ap2—6 to 13 inches; dark brown (7.5YR 3/3) silt loam; common medium faint brown (7.5YR 4/3) worm channels; weak medium subangular blocky structure parting to moderate fine granular; friable; many fine and medium roots; moderately acid (pH—5.6); clear wavy boundary.
- Bw1—13 to 23 inches; brown (7.5YR 4/3) silt loam; moderate medium subangular blocky structure; friable; common fine and medium roots; few fine distinct brown (7.5YR 4/3) clay films on surfaces along pores; many medium distinct strong brown (7.5YR 4/6) and common medium distinct dark brown (7.5YR 3/4) iron accumulations with clear boundaries in the matrix; moderately acid (pH—5.6); gradual wavy boundary.
- Bw2—23 to 28 inches; brown (7.5YR 4/3) silt loam; moderate medium subangular blocky structure; friable; common fine and medium roots; few fine distinct brown (7.5YR 4/3) clay films on surfaces along pores; many medium faint brown (7.5YR 4/2) iron depletions with clear boundaries in the matrix; many medium distinct strong brown (7.5YR 4/6) iron accumulations with clear boundaries in the matrix; moderately acid (pH—5.6); gradual wavy boundary.
- BC—28 to 50 inches; brown (7.5YR 4/2) silt loam; moderate medium subangular blocky structure; friable; common fine and medium roots; many medium distinct strong brown (7.5YR 4/6) iron accumulations with clear boundaries in the matrix; moderately acid (pH—5.6); gradual wavy boundary.
- C1—50 to 59 inches; brown (7.5YR 4/2) silt loam; massive; friable; common medium distinct strong brown (7.5YR 4/6) iron accumulations with clear boundaries in the matrix; moderately acid (pH—5.8); gradual wavy boundary.
- C2—59 to 72 inches; brown (7.5YR 4/2) silt loam; massive; friable; many coarse prominent yellowish red (5YR 4/6) iron accumulations with clear boundaries in the matrix; common medium and fine prominent black (10YR 2/1) manganese accumulations with clear boundaries in the matrix; moderately acid (pH—5.8).

### Range in Characteristics

*Thickness of solum:* 20 to 50 inches

*Depth to bedrock:* greater than 72 inches

*Coarse fragments:* 0 to 5 percent by volume in the A, Bw, and BC horizons; 0 to 35 percent by volume in the C horizon

*Reaction:* extremely acid to strongly acid in the A horizon, Bw, and BC horizons; strongly acid to slightly alkaline in the C horizon where unlimed

*O horizon, where present:*

Color—black or brown

Texture—slightly to highly decomposed plant material

*Ap horizon:*

Color—hue of 7.5YR or 10YR, value of 3 to 5, and chroma of 2 or 3

Texture—silt loam in the fine earth fraction

*Bw horizon:*

Color—hue of 7.5YR to 5Y, value of 4 or 5, and chroma of 3 to 6

Texture—silt loam or very fine sandy loam in the fine earth fraction

Redoximorphic features—iron depletions in shades of gray and iron concentrations in shades of brown

*BC horizon:*

Color—hue of 7.5YR to 5Y, value of 4 or 5, and chroma of 3 to 6

Texture—silt loam or very fine sandy loam in the fine earth fraction

Redoximorphic features—iron depletions in shades of gray and iron concentrations in shades of brown

*C horizon:*

Color—hue of 7.5YR to 5Y, value of 4 to 6, and chroma of 1 to 4

Texture—silt loam or very fine sandy loam in the fine earth fraction

Redoximorphic features—iron depletions in shades of gray, iron concentrations in shades of brown or yellowish red, manganese concentrations in black

**Swartswood Series**

*Depth class:* very deep

*Drainage class:* well drained

*Permeability:* moderate or moderately rapid above the fragipan, moderately slow or slow in the fragipan

*Parent material:* coarse-loamy till derived from conglomerate and/or gray and red sandstone

*Landscape:* till plains

*Landform:* ground moraines

*Associated soils:* Arnot; Lordstown; Urban land; Wurtsboro

*Slope range:* 0 to 35 percent

**Taxonomic class:** Coarse-loamy, mixed, active, mesic Typic Fragiudepts

**Typical Pedon**

SwfDc—Swartswood loam, 15 to 35 percent slopes, extremely stony; Montague Township, Sussex County, High Point State Park, 700 feet south of Sawmill Pond, 500 feet east of Sawmill Road, in a wooded area; USGS Port Jervis South, NJ-NY-PA topographic quadrangle; lat. 41 degrees 17 minutes 30 seconds N. and long. 74 degrees 41 minutes 07 seconds W. NAD27.

Oi—0 to 1 inch; black (10YR 2/1) slightly decomposed woody plant material.

A—1 to 2 inches; black (10YR 2/1) loam (2.5Y 3/1, dry); weak fine granular structure; very friable; many fine and few medium roots; 5 percent subrounded red and gray sandstone medium gravel; very strongly acid (pH—4.8); abrupt wavy boundary.

E—2 to 3 inches; grayish brown (10YR 5/2) fine sandy loam; weak fine subangular blocky structure; very friable; few fine and medium roots; 5 percent subrounded red and gray sandstone medium gravel; very strongly acid (pH—4.8); abrupt wavy boundary.

Bhs—3 to 4 inches; dark brown (10YR 3/3) fine sandy loam; weak fine subangular blocky structure; friable; few fine roots; 15 percent subrounded red and gray sandstone coarse gravel; very strongly acid (pH—4.8); abrupt wavy boundary.

Bw—4 to 21 inches; yellowish brown (10YR 5/6) gravelly fine sandy loam; weak medium subangular blocky structure; friable; few fine roots; 30 percent subrounded red and gray sandstone coarse gravel; very strongly acid (pH—5.0); clear wavy boundary.

Bx1—21 to 32 inches; dark yellowish brown (10YR 4/6) gravelly sandy loam; moderate medium subangular blocky structure; firm; 30 percent subrounded red and gray sandstone coarse gravel; very strongly acid (pH—5.0); clear wavy boundary.

Bx2—32 to 60 inches; dark yellowish brown (10YR 4/4) gravelly sandy loam; moderate very coarse prismatic structure parting to moderate fine subangular blocky structure; very firm; common coarse distinct light brownish gray (10YR 6/2) iron depletions with clear boundaries between prisms; common coarse prominent yellowish red (5YR 4/6) iron accumulations with clear boundaries on vertical faces of prisms; 30 percent subrounded red and gray sandstone coarse gravel; very strongly acid (pH—5.0).

### Range in Characteristics

*Thickness of solum:* 40 to 70 inches

*Depth to fragipan:* 20 to 36 inches

*Depth to bedrock:* greater than 60 inches

*Rock fragments:* 3 to 40 percent by volume in the A, E, Bhs, and Bw horizon; 15 to 60 percent by volume in the Bx horizon

*Reaction:* extremely acid to strongly acid where unlimed

*O horizon, where present:*

Color—black

Texture—slightly decomposed woody plant material

*A horizon:*

Color—hue of 10YR, value of 2 or 3, and chroma of 1 to 3

Texture—loam in the fine earth fraction

*E horizon, where present:*

Color—hue of 7.5YR or 10YR, value of 4 to 6, and chroma of 1 or 2

Texture—sandy loam or fine sandy loam in the fine earth fraction

*Bhs horizon, where present:*

Color—hue of 7.5YR or 10YR, value of 3, and chroma of 2 or 3

Texture—sandy loam or fine sandy loam in the fine earth fraction

*Bw horizon:*

Color—hue of 5YR to 10YR, value of 4 to 6, and chroma of 3 to 6

Texture—sandy loam, fine sandy loam, or loam in the fine earth fraction

*Bx horizon:*

Color—hue of 5YR to 10YR, value of 4 or 5, and chroma of 2 to 6

Texture—sandy loam, fine sandy loam, or loam in the fine earth fraction

## Udifulvents

*Depth class:* very deep

*Drainage class:* moderately well drained

*Permeability:* moderately rapid or rapid

*Parent material:* recent alluvium

*Landscape:* river valleys

*Landform:* flood plains

*Associated soils:* Fluvaquents

*Slope range:* 0 to 3 percent

**Taxonomic class:** Udifulvents

### Sample Pedon

UccAs—Udifulvents, 0 to 3 percent slopes, occasionally flooded; Walpack Township, Sussex County, Delaware Water Gap National Recreation Area, Walpack Bend, 4,500 feet southwest of the intersection of County Route 615 and Old Mine Road, 1,400 feet south of Old Mine Road, in a wooded area on a terrace adjacent to the Delaware River; USGS Flatbrookville, NJ-PA topographic quadrangle; lat. 41 degrees 05 minutes 38 seconds N. and long. 74 degrees 58 minutes 27 seconds W. NAD27.

A—0 to 3 inches; dark yellowish brown (10YR 3/3) loamy sand; single grain; loose; strongly acid (pH—5.3); clear smooth boundary.

- C1—3 to 16 inches; very dark gray (10YR 3/1) loamy sand; single grain; loose; strongly acid (pH—5.5); clear wavy boundary.
- C2—16 to 22 inches; dark brown (10YR 3/3) sandy loam; massive; friable; strongly acid (pH—5.5); clear wavy boundary.
- C3—22 to 27 inches; dark brown (10YR 3/3) sandy loam; massive; friable; common medium faint brown (10YR 4/3) iron depletions with clear boundaries in the matrix; strongly acid (pH—5.5); clear wavy boundary.
- C4—27 to 32 inches; dark brown (10YR 3/3) sandy loam; massive; friable; strongly acid (pH—5.5); clear wavy boundary.
- C5—32 to 50 inches; stratified; 95 percent dark yellowish brown (10YR 3/4) loamy sand; 5 percent dark yellowish brown (10YR 3/4) fine sandy loam; massive; friable; common medium faint brown (10YR 4/3) iron depletions with clear boundaries in the matrix; strongly acid (pH—5.5).

### Range in Characteristics

*Thickness of solum:* 6 to 30 inches

*Depth to bedrock:* greater than 60 inches

*Rock fragments:* 0 to 35 percent by volume

*Reaction:* very strongly acid to moderately acid

*O horizon, where present:*

Color—black or dark brown

Texture—slightly to highly decomposed organic material

*A horizon:*

Color—hue of 7.5YR to 2.5Y, value of 2 to 4, and chroma of 1 to 6

Texture—loamy sand in the fine earth fraction

*C horizon:*

Color—hue of 7.5YR to 5Y, value of 4 to 6, and chroma of 2 to 6

Texture—loamy sand or sandy loam in the fine earth fraction; stratified in some pedons

Redoximorphic features—iron depletions in shades of gray and iron concentrations in shades of brown

## Udorthents

*Depth class:* deep or very deep

*Drainage class:* well drained

*Permeability:* slow to very rapid

*Parent material:* fill and/or disturbed original soil material

*Slope range:* 0 to 8 percent

**Taxonomic class:** Udorthents

Udorthents are soils of slight and recent development, in this case due to some type of disturbance. Most of these areas are characterized by additions of fill, where the natural soil material was too wet or too stony for the desired land use. Examples include athletic fields, golf courses, and small residential or commercial developments, in areas of shallow or stony till, or wet portions of river valleys. These areas have been smoothed or graded until nearly level, mostly 0 to 8 percent slopes. Also included are the built up areas of the Erie Lackawanna railroad overpass, which tend to have steeper slopes. Soil profile development is limited to formation of a dark surface horizon due to organic matter addition, or some type of anthropogenic horizonation from the filling or grading processes. A typical pedon is not provided.

Because of their variability, no ranges in characteristics are provided.



## Unadilla Series

*Depth class:* very deep

*Drainage class:* well drained

*Permeability:* moderate in the surface layer and subsoil, moderately rapid or rapid in the substratum

*Parent material:* post glacial coarse-silty alluvium

*Landscape:* river valleys

*Landform:* inner terraces

*Associated soils:* Colonie, Delaware

*Slope range:* 0 to 8 percent

**Taxonomic class:** Coarse-silty, mixed, active, mesic Typic Dystrudepts

### Typical Pedon

UnfA—Unadilla silt loam, 0 to 3 percent slopes; Wallpack Township, Sussex County; Delaware Water Gap National Recreational Area, Wallpack Landing Field, 250 feet northeast of gravel entrance road, 200 feet west of Old Mine Road, in a cropland; USGS Lake Maskenozha topographic quadrangle; lat. 41 degrees 7 minutes 30.5 seconds N. and long. 74 degrees 56 minutes 38.5 seconds W. NAD83.

Ap1—0 to 8 inches; dark brown (10YR 3/3) silt loam; moderate fine and medium granular structure; friable; common very fine and fine roots; neutral (pH—7.0); clear smooth boundary.

Ap2—8 to 14 inches; dark brown (10YR 4/3) silt loam; moderate medium granular structure; friable; common very fine and fine roots; neutral (pH—6.6); abrupt smooth boundary.

Bw—14 to 25 inches; dark yellowish brown (10YR 3/4) silt loam; weak medium subangular blocky structure; friable; common very fine roots; neutral (pH—6.6); gradual wavy boundary.

BC—25 to 39 inches; dark yellowish brown (10YR 4/4) silt loam; weak medium and coarse subangular blocky structure; friable; neutral (pH—6.6); gradual wavy boundary.

C—39 to 60 inches; dark yellowish brown (10YR 4/4) very fine sandy loam; massive; friable; slightly acid (pH—6.5).

### Range in Characteristics

*Thickness of solum:* 20 to 50 inches or more

*Depth to bedrock:* greater than 60 inches

*Rock fragments:* 0 to 5 percent by volume in the A, Bw, and BC horizons, 0 to 15 percent by volume in the C horizon

*Reaction:* very strongly acid to neutral where unlimed

*O horizon, where present:*

Color—black or brown

Texture—slightly or moderately decomposed plant material

*Ap horizon:*

Color—hue of 7.5YR or 10YR, value of 3 to 5, and chroma of 2 to 4

Texture—silt loam in the fine earth fraction

*Bw horizon:*

Color—hue of 7.5YR to 2.5Y, value of 3 to 6, and chroma of 4 to 8

Texture—silt loam to very fine sandy loam in the fine earth fraction

*BC horizon:*

Color—hue of 7.5YR to 2.5Y, value of 3 to 5, and chroma of 4 to 6

Texture—silt loam to very fine sandy loam in the fine earth fraction

*C horizon:*

Color—hue of 7.5YR to 5Y, value of 4 to 5, and chroma of 2 to 6

Texture—loamy very fine sand, very fine sandy loam, or silt loam in the fine earth fraction above depths of 40 inches; very fine sandy loam or fine sandy loam in the fine earth fraction below 40 inches

**Venango Series**

*Depth class:* very deep

*Drainage class:* somewhat poorly drained

*Permeability:* moderate above the fragipan, very slow or slow in the fragipan

*Parent material:* fine-loamy till derived from limestone, sandstone, and shale

*Landscape:* drumlin fields

*Landform:* drumlins

*Associated soils:* Chippewa, Manlius, Nassau

*Slope range:* 0 to 15 percent

**Taxonomic class:** Fine-loamy, mixed, active, mesic Aeric Fragiqualfs

**Typical Pedon**

VepBc—Venango silt loam, 0 to 8 percent slopes, extremely stony; Wantage Township, Sussex County, 700 feet north of the intersection of Mt. Salem Road and Goodrich Road, 400 feet west of Goodrich Road, in a wooded area; USGS Unionville, NY-NJ topographic quadrangle; lat. 41 degrees 18 minutes 38 seconds N. and long. 74 degrees 35 minutes 50 seconds W. NAD83.

Oi—0 to 1 inch; black (10YR 2/1) slightly decomposed woody plant material.

Ap—1 to 6 inches; very dark grayish brown (10YR 3/2) silt loam (2.5Y 6/2, dry); moderate medium and fine granular structure; very friable; many fine and few medium roots; 5 percent subrounded shale and sandstone medium gravel; strongly acid (pH—5.2); abrupt wavy boundary.

Bw—6 to 16 inches; yellowish brown (10YR 5/4) silt loam; moderate medium and fine subangular blocky structure; friable; common fine and few medium roots; common fine prominent light brownish gray (10YR 6/2) iron depletions with clear boundaries in the matrix; common medium distinct dark yellowish brown (10YR 4/6) iron accumulations with clear boundaries on faces of peds; 5 percent subrounded sandstone and shale medium gravel; strongly acid (pH—5.2); clear wavy boundary.

Btx1—16 to 22 inches; dark yellowish brown (10YR 4/6) gravelly silty clay loam; moderate coarse prismatic structure parting to moderate coarse and fine subangular blocky structure; firm; common distinct patchy dark yellowish brown (10YR 4/6) clay films on faces of peds and lining pores; many coarse prominent light brownish gray (10YR 6/2) iron depletions with clear boundaries between prisms; many coarse distinct yellowish brown (10YR 5/6) iron accumulations with clear boundaries on vertical faces of prisms; 15 percent subrounded sandstone and shale coarse gravel; strongly acid (pH—5.2); clear wavy boundary.

Btx2—22 to 34 inches; dark yellowish brown (10YR 4/4) gravelly silty clay loam; strong coarse prismatic structure parting to moderate coarse and fine subangular blocky structure; firm; common distinct patchy dark yellowish brown (10YR 4/6) clay films on faces of peds and lining pores; many coarse prominent light brownish gray (10YR 6/2) iron depletions with clear boundaries between prisms; many coarse distinct yellowish brown (10YR 5/6) iron accumulations with clear boundaries on vertical faces of prisms; 15 percent subrounded sandstone and shale coarse gravel; strongly acid (pH—5.2); clear wavy boundary.

Btx3—34 to 60 inches; dark yellowish brown (10YR 4/4) gravelly silty clay loam; weak coarse prismatic structure; firm; common distinct patchy dark yellowish brown (10YR 4/6) clay films on faces of peds and lining pores; many coarse prominent light brownish gray (10YR 6/2) iron depletions with clear boundaries between prisms; many coarse distinct yellowish brown (10YR 5/6) iron accumulations with clear boundaries on vertical faces of prisms; 25 percent subrounded sandstone and shale coarse gravel; moderately acid (pH—5.6); clear wavy boundary.

### Range in Characteristics

*Thickness of solum:* 36 to 72 inches

*Depth to bedrock:* greater than 60 inches

*Depth to fragipan:* 14 to 28 inches

*Depth to free carbonates:* greater than 45 inches

*Rock fragments:* 0 to 25 percent by volume in the A horizon, 2 to 25 percent by volume in the Bw and Btx horizons

*Reaction:* extremely acid to moderately acid in the A and Bw horizons, very strongly acid to slightly acid in the upper part of the Btx horizon, strongly acid to neutral in the lower part of the Btx horizon where unlimed

*O horizon, where present:*

Color—black

Texture—slightly decomposed woody plant material

*A horizon:*

Color—hue of 10YR, value of 2 or 3, and chroma of 1 to 3

Texture—silt loam in the fine earth fraction

*Bw horizon:*

Color—hue of 10YR or 2.5Y, value of 4 to 6, and chroma of 2 to 6

Texture—loam, silt loam, or silty clay loam in the fine earth fraction

*Btx horizon:*

Color—hue of 10YR to 5Y, value of 4 to 6, and chroma of 2 to 6

Texture—loam, silt loam, or silty clay loam in the fine earth fraction

## Wallkill Taxadjunct

*Depth class:* very deep

*Drainage class:* very poorly drained

*Permeability:* moderate in the mineral portion, moderately rapid to rapid in the organic portion

*Parent material:* fine-loamy alluvium over organic material

*Landscape:* river valleys

*Landform:* flood plains

*Associated soils:* Catden

*Slope range:* 0 to 3 percent

**Taxonomic class:** Fine-loamy, mixed, superactive, nonacid, mesic Fluvaquentic Endoaquepts

### Typical Pedon

WaahAt—Wallkill silt loam, 0 to 3 percent slopes, frequently flooded; Vernon Township, Sussex County, Wallkill River National Wildlife Refuge, 3,200 feet southwest of Oil City Road along the Liberty Loop Trail, 350 feet northwest of the Liberty Loop Trail, in a forested area; USGS Unionville, NY-NJ topographic quadrangle; lat. 41 degrees 16 minutes 41 seconds N. and long. 74 degrees 32 minutes 18 seconds W. NAD27.

- A—0 to 6 inches; very dark brown (10YR 2/2) silt loam (10YR 6/2, dry); moderate fine granular structure; very friable; few fine and medium roots; very strongly acid (pH—5.0); clear wavy boundary.
- Bg1—6 to 14 inches; dark grayish brown (2.5Y 4/2) silt loam; moderate medium subangular blocky structure; friable; few fine and medium roots; common medium distinct very dark gray (10YR 3/1) iron depletions with clear boundaries in the matrix; common fine distinct dark yellowish brown (10YR 3/6) iron accumulations with clear boundaries in the matrix; strongly acid (pH—5.4); clear wavy boundary.
- Bg2—14 to 22 inches; dark grayish brown (2.5Y 4/2) silty clay loam; weak medium subangular blocky structure; firm; few fine and medium roots; common medium distinct very dark gray (10YR 3/1) iron depletions with clear boundaries in the matrix; few medium distinct dark yellowish brown (10YR 3/6) iron accumulations with clear boundaries in the matrix; moderately acid (pH—5.6); clear wavy boundary.
- Ab—22 to 27 inches; gray (2.5Y 2.5/1) mucky silty clay loam; weak fine subangular blocky structure; firm; few fine and coarse roots; common medium distinct dark grayish brown (10YR 4/2) iron depletions with clear boundaries on horizontal faces of peds; strongly acid (pH—5.2); clear wavy boundary.
- 2Oa1—27 to 55 inches; black (10YR 2/1) broken face and rubbed muck; 10 percent fibers, less than 5 percent rubbed fibers; strong coarse subangular blocky structure; friable; common fine roots; very strongly acid (pH—4.8); clear smooth boundary.
- 2Oa2—55 to 60 inches; black (10YR 2/1) broken face and very dark brown (10YR 2/2) rubbed muck; 20 percent fibers, 5 percent rubbed fibers; massive; friable; very strongly acid (pH—4.8).

### Range in Characteristics

*Depth to 2O horizon:* 16 to 40 inches

*Depth to bedrock:* greater than 60 inches

*Depth to carbonates:* greater than 60 inches

*Rock fragments:* 0 to 20 percent in the A, Bg, and Ab horizons

*Reaction:* very strongly acid to moderately alkaline where unlimed

#### *A horizon:*

Color—hue of 10YR or 2.5Y, value of 2 to 4, and chroma of 1 or 2

Texture—silt loam in the fine earth fraction

#### *Bg horizon:*

Color—hue of 10YR to 5Y, value of 3 to 5, and chroma of 1 or 2

Texture—silty clay loam or silt loam in the fine earth fraction, mucky modifiers allowed

#### *Ab horizon, where present:*

Color—hue of 10YR or 2.5Y, value of 2 or 3, and chroma of 0 to 2

Texture—silty clay loam or silt loam in the fine earth fraction, mucky modifiers allowed

#### *2O horizon:*

Color—hue of 5YR to 2.5Y, value of 2 or 3, and chroma of 0 to 2

Texture—mucky peat or muck

**Note:** Wallkill is being mapped as a taxadjunct to the Wallkill series, as the surface layer of this soil is thinner and has a higher dry color value than what is typical for the Wallkill series.

## Wallpack Series

*Depth class:* very deep

*Drainage class:* well drained

*Permeability:* moderate or moderately rapid above the fragipan, moderately slow to very slow in the fragipan

*Parent material:* coarse-loamy till derived from limestone, sandstone, and shale

*Landscape:* till plains

*Landform:* ridges

*Associated soils:* Cambridge, Chadakoin, Lordstown, Rock outcrop

*Slope range:* 0 to 35 percent

**Taxonomic class:** Coarse-loamy, mixed, semiactive, mesic Typic Fragiudalfs

### Typical Pedon

WacC—Wallpack silt loam, 8 to 15 percent slopes; Walpack Township, Sussex County, Delaware Water Gap National Recreation Area, 2,300 feet northwest of Walpack Center, 200 feet southwest of intersection of old township roads and 100 feet east of an old north-south township road, in an abandoned cropland; USGS Lake Maskenozha topographic quadrangle; lat. 41 degrees 9 minutes 39.5 seconds N. and long. 74 degrees 53 minutes 15.3 seconds W. NAD83.

Ap1—0 to 3 inches; brown (10YR 4/3) silt loam; moderate fine and medium granular structure; friable; common fine and medium roots; 5 percent subangular shale and limestone medium gravel; 5 percent subrounded shale and limestone medium gravel; strongly acid (pH—5.3); abrupt smooth boundary.

Ap2—3 to 9 inches; dark yellowish brown (10YR 4/4) gravelly silt loam; moderate fine granular and moderate fine subangular blocky structure; friable; common fine and medium roots; 10 percent subangular shale and limestone coarse gravel; 5 percent subrounded shale and limestone medium gravel; strongly acid (pH—5.3); abrupt smooth boundary.

Bt—9 to 16 inches; yellowish brown (10YR 5/6) gravelly silt loam; moderate medium subangular blocky structure; friable; few fine roots; common distinct discontinuous brown (7.5YR 4/4) clay films on rock fragments; 10 percent subangular shale and limestone medium gravel; 10 percent subrounded shale and limestone medium gravel; moderately acid (pH—5.8); clear wavy boundary.

Btx1—16 to 25 inches; dark yellowish brown (10YR 4/4) gravelly silt loam; moderate coarse prismatic structure parting to moderate medium subangular blocky and weak medium platy structure; very firm; brittle; common distinct patchy brown (7.5YR 4/4) clay films on rock fragments; many coarse prominent light brownish gray (2.5Y 6/2) iron depletions with clear boundaries between prisms; many coarse distinct yellowish brown (10YR 5/8) iron accumulations with clear boundaries on vertical faces of prisms; 20 percent subrounded shale and limestone fine gravel; 5 percent subangular shale and limestone medium gravel; slightly acid (pH—6.4); clear wavy boundary.

Btx2—25 to 65 inches; dark yellowish brown (10YR 4/4) very gravelly silt loam; strong very coarse prismatic structure parting to moderate medium subangular blocky and weak medium platy structure; very firm; brittle; common distinct patchy brown (7.5YR 4/4) clay films on rock fragments; common medium distinct light olive brown (2.5Y 5/4) iron accumulations with clear boundaries between prisms; common medium distinct strong brown (7.5YR 5/6) iron accumulations with clear boundaries on vertical faces of prisms; 20 percent subangular shale and limestone coarse gravel; 20 percent subrounded shale and limestone fine gravel; neutral (pH—7.0).

### Range in Characteristics

*Thickness of solum:* 24 to 60 inches or more

*Depth to fragipan:* 12 to 36 inches

*Depth to bedrock:* greater than 65 inches

*Rock fragments:* 5 to 25 percent by volume in the A or Ap, AB or BA, and Bt horizons;  
15 to 45 percent by volume in the Btx and C horizons

*Reaction:* strongly acid to slightly acid in the A or Ap, AB or BA, and Bt horizons;  
moderately acid to slightly alkaline in the Btx and C horizons where unlimed

*O horizon, where present:*

Color—black

Texture—slightly or moderately decomposed plant material

*Ap or A horizon:*

Color—hue of 10YR, value from 3 to 5, and chroma from 1 to 4

Texture—silt loam in the fine earth fraction

Some pedons have an A horizon that is thinner than that of the typical pedon but has colors and textures similar to those of the Ap horizon.

*AB or BA horizon, where present:*

Color—hue of 7.5YR or 10YR, value of 4 or 5, and chroma from 3 to 6

Texture—sandy loam to silt loam in the fine earth fraction

*Bt horizon:*

Color—hue of 7.5YR or 10YR, value of 4 or 5, and chroma from 4 to 8

Texture—sandy loam to silt loam in the fine earth fraction

*Btx horizon:*

Color—hue of 7.5YR or 10YR, value of 4 or 5, and chroma from 4 to 6

Texture—sandy loam to silt loam in the fine earth fraction

Redoximorphic features—iron depletions in shades of gray and iron accumulations in shades of brown

*C horizon, where present:*

Color—hue from 5Y to 7.5YR, value of 4 or 5, chroma of 4 to 6

Texture—sandy loam to silt loam in the fine earth fraction

### Wallpack Taxadjunct

*Depth class:* deep

*Drainage class:* well drained

*Permeability:* moderate

*Parent material:* aeolian deposits over coarse-loamy till derived from limestone, sandstone, and shale

*Landscape:* till plains

*Landform:* ridges

*Associated soils:* Aquic Dystrudepts; Lordstown

*Slope range:* 0 to 35 percent

**Taxonomic class:** Coarse-loamy, mixed, semiactive, mesic Typic Hapludalfs

### Typical Pedon

WabCb—Wallpack fine sandy loam, aeolian mantle, 8 to 15 percent slopes, very stony; Sandyston Township, Sussex County, Delaware Water Gap National Recreational Area, 0.6 miles south of the intersection of Old Mine Rd and Route 646, east side of Old Mine Road, in a wooded area; USGS Milford topographic quadrangle;

lat. 41 degrees 15 minutes 23 seconds N. and long. 74 degrees 50 minutes 6 seconds W. NAD83.

- Oi—0 to 1 inch; very dark brown (10YR 2/2) slightly decomposed organic material.
- A—1 to 2 inches; very dark grayish brown (10YR 3/2) fine sandy loam; moderate fine subangular blocky and weak fine granular structure; friable; many fine, common medium, and few coarse roots; very strongly acid (pH—4.8); clear smooth boundary.
- Ap—2 to 8 inches; dark yellowish brown (10YR 4/4) fine sandy loam; moderate medium and fine subangular blocky structure; friable; many fine and medium and common coarse roots; very strongly acid (pH—4.8); clear smooth boundary.
- Bw1—8 to 14 inches; dark yellowish brown (10YR 4/6) fine sandy loam; moderate medium subangular blocky structure; friable; common fine and few medium roots; 5 percent angular sandstone medium gravel; strongly acid (pH—5.3); clear smooth boundary.
- 2Bw2—14 to 21 inches; strong brown (7.5YR 4/6) fine sandy loam; moderate medium subangular blocky structure; friable; few slightly firm peds; few distinct patchy strong brown (7.5YR 4/6) clay films on faces of peds; 5 percent angular chert medium gravel; 5 percent angular sandstone medium gravel; strongly acid (pH—5.3); gradual wavy boundary.
- 2Bw3—21 to 26 inches; strong brown (7.5YR 4/6) gravelly fine sandy loam; moderate medium subangular blocky structure; friable; few slightly firm peds; few distinct patchy strong brown (7.5YR 4/6) clay films on faces of peds; 9 percent angular chert medium gravel; 8 percent angular sandstone medium gravel; strongly acid (pH—5.3); gradual wavy boundary.
- 2BC1—26 to 31 inches; strong brown (7.5YR 4/6) very gravelly fine sandy loam/loam; weak medium subangular blocky structure; friable; few slightly firm peds; common distinct patchy strong brown (7.5YR 4/6) clay films on faces of peds; 35 percent percent angular chert and sandstone medium gravel; 10 percent subangular sandstone cobbles; strongly acid (pH—5.3); gradual wavy boundary.
- 2BC2—31 to 36 inches; 60 percent strong brown (7.5YR 4/6) and 40 percent dark yellowish brown (10YR 4/6) very gravelly fine sandy loam; weak medium subangular blocky structure; friable; few slightly firm peds; common distinct patchy strong brown (7.5YR 4/6) clay films on faces of peds; 15 percent angular chert medium gravel; 15 percent angular sandstone medium gravel; 10 percent subangular sandstone cobbles; strongly acid (pH—5.3); gradual wavy boundary.
- 2BC3—36 to 60 inches; dark yellowish brown (10YR 4/4) gravelly fine sandy loam; weak medium subangular blocky and weak thick platy structure; friable; few slightly firm peds; few distinct patchy strong brown (10YR 4/4) clay films on faces of peds; 8 percent angular chert medium gravel; 8 percent angular sandstone medium gravel; strongly acid (pH—5.3).

### Range in Characteristics

*Thickness of solum:* 40 to 75 inches or more

*Depth to bedrock:* greater than 60 inches

*Rock fragments:* 10 to 40 percent by volume in the A, E, and Bw horizons, 15 to 65 percent in the 2Bw and 2BC horizons

*Reaction:* Extremely acid to strongly acid, unless limed.

*O horizon, where present:*

Color—black

Texture—slightly or moderately decomposed plant material

*A horizon:*

Color—hue of 5YR to 10YR, value of 2 to 4, and chroma of 1 to 3

Texture—fine sandy loam in the fine earth fraction

*E horizon, where present:*

Color—hue of 5YR to 10YR, value of 3 to 6, and chroma of 2 or 3

Texture—fine sandy loam, loam, or silt loam in the fine earth fraction

*Bw and 2Bw horizon:*

Color—hue of 2.5YR to 10YR, value of 4 or 5, and chroma of 3 to 6.

Texture is fine sandy loam, loam, or silt loam in the fine earth fraction

*2BC horizon:*

Color—hue of 10R to 5YR, value of 3 to 5, and chroma of 2 to 4.

Texture—fine sandy loam, loam, or silt loam in the fine earth fraction

**Note:** Wallpack is being mapped as a taxadjunct to the Wallpack series, as this soil lacks the fragipan that is typical of the Wallpack series.

## Wassaic Series

*Depth class:* moderately deep

*Drainage class:* well drained

*Permeability:* moderate

*Parent material:* fine-loamy till derived from limestone and dolomite

*Landscape:* till plains

*Landform:* ground moraines

*Associated soils:* Farmington; Galway; Rock outcrop; Urban land

*Slope range:* 0 to 8 percent

**Taxonomic class:** Fine-loamy, mixed, active, mesic Glossic Hapludalfs

### Typical Pedon

FdwB—Farmington-Wassaic-Rock outcrop complex, 0 to 8 percent slopes; Hampton Township, Sussex County, Paulinskill Wildlife Management Area, 7,200 feet south of intersection of Route 626 and Parsons Road, 300 feet northwest of Parsons Road, in a wooded area; USGS Newton West, NJ topographic quadrangle; lat. 41 degrees 05 minutes 19 seconds N. and long. 74 degrees 46 minutes 43 seconds W. NAD27.

Oi—0 to 1 inch; black (10YR 2/1) slightly decomposed woody plant material.

A—1 to 5 inches; dark brown (10YR 3/3) loam (2.5Y 5/3, dry); moderate medium and fine subangular blocky structure; friable; common fine and few coarse roots; moderately acid (pH—6.0); abrupt wavy boundary.

E/A—5 to 9 inches; yellowish brown (10YR 5/4) loam; moderate medium and weak fine subangular blocky structure; friable; common fine and medium and few coarse roots; 2 to 4 inch thick fingers of dark brown (10YR 3/3) loam extend from the A horizon along vertical faces of peds; moderately acid (pH—6.0); clear wavy boundary.

Bt/E—9 to 17 inches; strong brown (7.5YR 4/6) silty clay loam; strong coarse and moderate medium subangular blocky structure; friable; few fine and medium roots; 1 to 2 inch thick fingers of yellowish brown (10YR 5/4) fine sandy loam extend from the E/A horizon along vertical faces of peds; moderately acid (pH—5.6); clear wavy boundary.

Bt—17 to 28 inches; strong brown (7.5YR 4/6) silty clay loam; strong medium subangular blocky structure; friable; many medium prominent brown (7.5YR 4/4) clay films on faces of peds; slightly acid (pH—6.2); abrupt wavy boundary.

2R—28 inches; horizontally bedded soft gray limestone bedrock.

### Range in Characteristics

*Thickness of solum:* 20 to 36 inches



*Depth to bedrock:* 20 to 40 inches

*Rock fragments:* 0 to 35 percent by volume in the A and E/A horizons, 0 to 35 percent by volume in the Bt/E and Bt horizons

*Reaction:* moderately acid to neutral where unlimed

*O horizon, where present:*

Color—black or brown

Texture—slightly to moderately decomposed woody plant material

*A horizon:*

Color—hue of 7.5YR or 10YR, value of 3 to 5, and chroma of 2 or 3

Texture—loam in the fine earth fraction

*E/A horizon:*

Color—hue of 5YR to 2.5Y, value of 5 or 6, and chroma of 2 to 4

Texture—fine sandy loam, loam, or silt loam in the fine earth fraction

*Bt/E horizon:*

Color—hue of 5YR to 2.5Y, value of 4 to 6, and chroma of 3 to 6

Texture—fine sandy loam, loam, silt loam, or silty clay loam in the fine earth fraction

*Bt horizon:*

Color—hue of 5YR to 2.5Y, value of 4 or 5, and chroma of 3 to 6

Texture—loam, silt loam, or silty clay loam in the fine earth fraction

*2R horizon:*

Hard or soft dolomite, limestone, and calcareous sandstone bedrock

## Wellsboro Series

*Depth class:* very deep

*Drainage class:* moderately well drained

*Permeability:* moderate above the fragipan, slow in the fragipan

*Parent material:* coarse-loamy till derived from red shale and/or red sandstone and siltstone

*Landscape:* mountains

*Landform:* ground moraines

*Associated soils:* Lackawanna, Morris

*Slope range:* 0 to 15 percent

**Taxonomic class:** Coarse-loamy, mixed, active, mesic Typic Fragiudepts

### Typical Pedon

WecBc—Wellsboro silt loam, 0 to 8 percent slopes, extremely stony; Pahaquarry Township, Warren County, Delaware Water Gap National Recreation Area, Millbrook Village, 528 feet west of the intersection of Old Mine Road and County Route 602, 200 feet north of Old Mine Road, in a wooded area at the toeslope of Kittatinny Mountain; USGS Flatbrookville topographic quadrangle; lat. 41 degrees 04 minutes 24 seconds N. and long. 74 degrees 57 minutes 40 seconds W. NAD83.

Ap—0 to 8 inches; brown (10YR 4/3) silt loam; weak medium subangular blocky structure parting to moderate medium and fine granular; friable; common fine and medium and few coarse roots; 8 percent subangular red and gray sandstone cobbles; 3 percent subangular red and gray sandstone coarse gravel; strongly acid (pH—5.3); clear wavy boundary.

- Bw1—8 to 15 inches; light reddish brown (5YR 6/3) cobbly silt loam; moderate medium subangular blocky structure; friable; common fine roots; common fine distinct reddish brown (5YR 5/4) iron accumulations with clear boundaries in the matrix; many medium prominent black (10YR 2/1) manganese accumulations in the matrix; 14 percent subangular red and gray sandstone cobbles; 10 percent subangular red and gray sandstone coarse gravel; strongly acid (pH—5.2); gradual wavy boundary.
- Bw2—15 to 24 inches; light reddish brown (5YR 6/3) cobbly loam; moderate medium subangular blocky structure; friable; few fine roots; many medium prominent strong brown (7.5YR 5/6) iron accumulations with clear boundaries in the matrix; 14 percent subangular red and gray sandstone cobbles; 10 percent subangular red and gray sandstone coarse gravel; strongly acid (pH—5.2); gradual wavy boundary.
- Bw3—24 to 29 inches; light brown (7.5YR 6/3) cobbly loam; moderate medium subangular blocky structure; friable; few fine roots; common medium faint pinkish gray (7.5YR 6/2) iron depletions with clear boundaries in the matrix; many medium distinct strong brown (7.5YR 5/6) and common medium distinct yellowish red (5YR 4/6) iron accumulations with clear boundaries in the matrix; 15 percent subangular red and gray sandstone cobbles; 14 percent subangular red and gray sandstone coarse gravel; strongly acid (pH—5.2); clear wavy boundary.
- Bx1—29 to 37 inches; reddish brown (5YR 4/3) cobbly sandy loam; moderate very thick platy structure; firm; common vesicular pores; common distinct patchy reddish brown (5YR 4/3) clay films on rock fragments; 18 percent subangular red and gray sandstone cobbles; 16 percent subangular red and gray sandstone coarse gravel; strongly acid (pH—5.1); gradual wavy boundary.
- Bx2—37 to 60 inches; 70 percent reddish brown (5YR 4/3) and 30 percent weak red (2.5YR 5/3) cobbly sandy loam; moderate very thick platy structure; firm; common vesicular pores; common distinct patchy reddish brown (5YR 4/3) clay films on rock fragments; common medium faint reddish brown (5YR 4/4) iron accumulations with clear boundaries in the matrix; common medium prominent black (10YR 2/1) manganese accumulations with sharp boundaries in the matrix; 18 percent subangular red and gray sandstone cobbles; 16 percent subangular red and gray sandstone coarse gravel; strongly acid (pH—5.1).

### Range in Characteristics

*Thickness of solum:* 40 inches or more

*Depth to fragipan:* 17 to 36 inches

*Depth to bedrock:* greater than 60 inches

*Rock fragments:* 10 to 40 percent by volume in the A, E, and Bw horizons, 15 to 45 percent by volume in the Bx horizons

*Reaction:* extremely acid to strongly acid where unlimed

*O horizon, where present:*

Color—black or brown

Texture—slightly or moderately decomposed plant material

*Ap horizon*

Color—hue of 5YR to 10YR, value of 2 to 4, and chroma of 1 to 3

Texture—silt loam in the fine earth fraction

Some pedons have an A horizon that is thinner than but with colors and texture similar to that of the typical pedon

*E horizon, where present:*

Color—hue of 5YR to 10YR, value of 3 to 6, and chroma of 2 or 3

Texture—fine sandy loam, loam, or silt loam in the fine earth fraction

*Bw horizon:*

Color—hue of 2.5YR to 10YR, value of 4 or 5, and chroma of 3 to 6  
Texture—loam or silt loam in the fine earth fraction

*Bx horizon:*

Color—hue of 10R to 5YR, value of 3 to 5, and chroma of 2 to 4  
Texture—sandy loam, loam, or silt loam in the fine earth fraction  
Redoximorphic features—iron depletions in shades of gray and iron accumulations in shades of red

## Wurtsboro Series

*Depth class:* very deep

*Drainage class:* moderately well drained

*Permeability:* moderate to moderately rapid above the fragipan, slow in the fragipan

*Parent material:* bouldery quartzose coarse-loamy drift derived from conglomerate

*Landscape:* till plains

*Landform:* ground moraines

*Associated soils:* Swartswood; Urban land

*Slope range:* 0 to 35 percent

**Taxonomic class:** Coarse-loamy, mixed, active, mesic Typic Fragiudepts

### Typical Pedon

WusCc—Wurtsboro-Swartswood complex, 8 to 15 percent slopes, extremely stony; Hampton Township, Sussex County, Bear Swamp Wildlife Management Area, 2,800 feet southeast of the intersection of County Route 521 and County Route 617, 2,800 feet northeast of County Route 521, in a wooded area; USGS Culvers Gap, NJ-PA topographic quadrangle; lat. 41 degrees 08 minutes 25 seconds N. and long. 74 degrees 49 minutes 35 seconds W. NAD27.

Oi—0 to 2 inches; black (10YR 2/1) slightly decomposed woody plant material.

A—2 to 3 inches; black (10YR 2/1) fine sandy loam (10YR 4/1, dry); weak fine granular structure; very friable; many fine and few medium roots; very strongly acid (pH—4.8); abrupt wavy boundary.

E—3 to 4 inches; grayish brown (10YR 5/2) fine sandy loam; weak fine granular structure; friable; common fine and medium roots; very strongly acid (pH—4.8); abrupt wavy boundary.

Bhs—4 to 6 inches; dark brown (10YR 3/3) fine sandy loam; weak fine granular structure; friable; common fine and medium roots; 10 percent subrounded red and gray sandstone and black shale coarse gravel; very strongly acid (pH—4.8); abrupt wavy boundary.

Bw1—6 to 18 inches; yellowish brown (10YR 5/6) sandy loam; moderate fine and weak medium subangular blocky structure; friable; many fine and few medium and coarse roots; 10 percent subrounded red and gray sandstone and black shale medium gravel; very strongly acid (pH—4.8); clear wavy boundary.

Bw2—18 to 24 inches; yellowish brown (10YR 5/6) gravelly sandy loam; moderate fine and weak medium subangular blocky structure; friable; common coarse prominent light brownish gray (10YR 6/2) iron depletions with clear boundaries in the matrix; many medium distinct yellowish brown (10YR 5/8) iron accumulations with clear boundaries in the matrix; common fine and few medium roots; 15 percent subrounded red and gray sandstone and black shale medium gravel; 10 percent subrounded red and gray sandstone and black shale coarse gravel; very strongly acid (pH—5.0); clear wavy boundary.

- Bx1—24 to 33 inches; dark yellowish brown (10YR 4/6) gravelly sandy loam; moderate coarse prismatic structure parting to moderate medium subangular blocky structure; firm; brittle; few fine roots; many medium prominent light brownish gray (10YR 6/2) iron depletions with clear boundaries between prisms; common coarse distinct yellowish brown (10YR 5/8) iron accumulations with clear boundaries on vertical faces of prisms; 15 percent subrounded red and gray sandstone medium gravel; 10 percent subrounded red and gray sandstone and black shale coarse gravel; very strongly acid (pH—5.0); clear wavy boundary.
- Bx2—33 to 60 inches; dark yellowish brown (10YR 4/4) gravelly sandy loam; strong coarse prismatic structure parting to moderate medium platy structure; very firm; brittle; many coarse distinct light brownish gray (10YR 6/2) iron depletions with clear boundaries between prisms; many medium prominent yellowish brown (10YR 5/8) iron accumulations with clear boundaries on vertical faces of prisms; 15 percent subrounded red and gray sandstone medium gravel; 10 percent subrounded red and gray sandstone and black shale coarse gravel; very strongly acid (pH—5.0).

### **Range in Characteristics**

*Thickness of solum:* 40 to 70 inches

*Depth to fragipan:* 17 to 28 inches

*Depth to bedrock:* greater than 60 inches

*Rock fragments:* 0 to 40 percent by volume in the A, E, Bhs, and Bw horizons; 10 to 60 percent by volume in the Bx horizon

*Reaction:* extremely acid to strongly acid where unlimed

*O horizon, where present:*

Color—black

Texture—slightly decomposed woody plant material

*A horizon:*

Color—hue of 10YR, value of 2 to 4, and chroma of 1 to 3

Texture—fine sandy loam in the fine earth fraction

*E horizon:*

Color—hue of 7.5YR or 10YR, value of 4 to 6, and chroma of 2 or 3

Texture—fine sandy loam or loam in the fine earth fraction

*Bhs horizon:*

Color—hue of 7.5YR or 10YR, value of 3, and chroma of 2 or 3

Texture—fine sandy loam or loam in the fine earth fraction

*Bw horizon:*

Color—hue of 5YR to 2.5Y, value of 4 or 5, and chroma of 3 to 6

Texture—sandy loam, fine sandy loam, or loam in the fine earth fraction

*Bx horizon:*

Color—hue of 5YR to 2.5Y, value of 4 or 5, and chroma of 2 to 6

Texture—sandy loam, fine sandy loam, or loam in the fine earth fraction

# Formation of the Soils

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This section relates the factors of soil formation to the soils in Sussex County and explains the processes of soil formation.

## Factors of Soil Formation

A soil is a three-dimensional natural body consisting of mineral and organic material that can support plant growth. The nature of any soil at a given site is the result of the interaction of the five “soil forming factors”: parent material, climate, plants and animals, relief, and time. Climate and plants and animals have an effect on parent material that is modified by relief over time. Theoretically, if all these factors were identical at different sites, the soils at these sites would be identical. Differences among the soils are caused by variations in one or more of these factors (Buol and others, 1980).

## Parent Material

Parent material is unconsolidated organic and mineral material from which soil forms when acted on by the soil-forming processes. It largely determines soil texture, which, in turn, affects other properties, such as natural soil drainage and permeability. The physical and chemical composition of parent material has an important effect on the kind of soil that forms.

The types of parent materials found in Sussex County include till and glaciofluvial deposits, alluvium, and organic deposits ([Table 33](#)).

Till is rock or soil material transported and deposited by glacial ice. It contains particles that can vary in size from sand, silt, and clay up to gravels, cobbles, stones, and boulders (Salisbury, 1902; Witte, in press, Chapter 5). The rock fragments generally are angular, but can also be subrounded or rounded. The composition of the till depends on the geology of the area over which the ice passed before the till was deposited. Till can be transported great distances by a glacier, or it can be of local origin.

The till in Sussex County was deposited by the Wisconsinan continental glacier as a till plain composed of either ground moraines or recessional moraines. Ground moraines tend to have broad slopes and gently rolling topography ([fig. 14](#)). Recessional moraines delineate periods when the glacier stagnated during its recession, causing the glacier to deposit till as narrow, steep-sided ridges with hummocky summits that tend to run parallel with the face of the glacier and perpendicular to the direction of ice recession. Some of the till was deposited as drumlins, which are hills, mounds, or ridges containing a core of bedrock or till. They are normally teardrop shaped, with the rounded nose facing the direction from which the glacier advanced. Their long axis is parallel to the direction of ice flow. In other parts of the county the till deposits are thin or even discontinuous. Rock outcrops are common in these areas (Witte, in press, Chapter 4).

The till deposits found in Sussex County were heavily influenced by the underlying geology of the areas upon which they were deposited. Consequently, the rock fragments and soil textures and colors of the till soils reflect the underlying geology.



**Figure 14.—An example of ground moraine. This till deposit was laid down along the eastern footslope of the Kittatinny Mountain by the Wisconsin glacier.**

The Wallpack soils are found only on the Wallpack Ridge and formed in till derived from the shale and limestone bedrock of the ridge's Devonian Schoharie Formation, Esopus Formation, Oriskany Group, Port Ewen Shale, Minisink Limestone, New Scotland Formation, Kalkberg Limestone, Coeymans Limestone, Manlius Limestone, Devonian and Silurian Roundout Formation, and Silurian Decker Formation, Bossardsville Limestone, and Poxono Island Formation. The Arnot and Lordstown soils are found predominately on Kittatinny Mountain and formed in till derived from the mountain's red sandstone of the Upper Silurian Bloomsburg Red Beds and conglomerate of the Middle and Lower Silurian Shawangunk Formation. The Manlius and Nassau soils occur mainly in the northern and western parts of the Kittatinny Valley and formed in till derived from the shale bedrock of the Upper and Middle Ordovician Martinsburg Formation that underlie these parts of the valley. Conversely, the Farmington, Galway, and Wassaic soils occur in the eastern and south central parts of the Kittatinny Valley and formed in till derived from the limestone and dolomite bedrock of the Middle Ordovician Jacksonburg Limestone, Lower Ordovician Beekmantown Group, and Lower Ordovician and Upper Cambrian Allentown Dolomite that underlie these parts of the valley. In the Highlands, the Chatfield, Hibernia, Hollis, and Rockaway soils formed in till derived mainly from the gneisses and granites found in the Middle Proterozoic Losee Metamorphic Suite and the Byram and Lake Hopatcong Intrusive Suites (NJGS, Volkert and others).

Glaciofluvial deposits, also called "outwash", consist of rock or soil material transported and deposited by meltwater running off a receding glacier. Similar to till, glaciofluvial deposits can have a variety of particle sizes. However, the particle-size distribution of these deposits depends upon the velocity of the meltwater carrying the soil and rock material away from the glacier. In general, the higher the velocity of water, the larger the particle that water can transport. Rock fragments found in these deposits are more commonly subrounded to rounded due to the fact that they were tumbled and polished during transport.

The glaciofluvial deposits in Sussex County were deposited by the Wisconsin continental glacier as eskers, kames, kame terraces, outwash deltas, outwash fans, outwash plains, and valley trains (fig 15). These deposits are referred to as “glaciofluvial” because they were transported and deposited in glacial meltwater streams (Witte, in press, Chapter 5).

The glaciofluvial deposits found in Sussex County were also influenced by the geology of the county. In some cases, the rock fragments found in these deposits have much more variability in their geologic origin than do the rock fragments found in till deposits. The Kittatinny Valley is underlain mainly by shale and limestone bedrock. However, the soils Fredon, Halsey, Hazen, Hoosic, and Otisville that occur in the valley contain rock fragments of conglomerate, limestone, sandstone, shale, and even some granite and gneiss in the eastern part of the valley near the Highlands. There is less variability in the geology of the rock fragments in the glaciofluvial deposits in the Highlands, where the soils Hinckley, Pompton, and Riverhead are found. These soils contain predominately granite and gneiss rock fragments.

Alluvium is material deposited by floodwater along streams and rivers. The texture of this material varies depending on the speed of the floodwater, the duration of flooding, and the distance from the stream bank. Soils that formed in alluvium can be highly stratified. The horizons in these soils are weakly expressed because the soil-forming processes are interrupted with each new deposition. The source of the alluvium generally is material eroded from other soils farther upstream in the watershed. In the Upper Delaware Valley in Sussex County, postglacial alluvial deposits were laid down during the Pleistocene and Holocene Epochs of the Quaternary period, following the retreat of the Wisconsin glacier. At the beginning of the glacier’s recession, the Delaware River was a braided stream fed by meltwater from the receding glacier. After the glacier fully retreated from the Upper Delaware Valley, the river became more linear. It was during this period of the river’s development that alluvium was being deposited as stream terraces of successive floodplains, with each floodplain being abandoned by the continual incising of the



**Figure 15.—Valley train glaciofluvial deposit in the Upper Delaware Valley. The Fredon, Halsey, Hazen, Hoosic, and Otisville soils formed in this glacial deposit.**



river into lower deposits and the dropping of the water level of the river itself (Witte, in press, Chapter 5). The Atherton, Colonie, Delaware, Scio, and Unadilla soils formed from these postglacial alluvial deposits. Along the Wallkill River in the Kittatinny Valley, the Wallkill soils formed in alluvium overlying organic deposits.

Organic deposits occur as an accumulation of decomposed plant material in postglacial lakes and ponds. Over time, these water bodies fill with organic material derived from algae, sedges, rushes, and other water-tolerant plants. The plant residue accumulates because the permanently wet condition of the soils prevents oxidation and slows decomposition. Soils formed in these organic deposits have the dark brown and black colors of the decomposed plant material from which they formed. The Catden soils and the underlying organic soil material of the Wallkill soils are derived from these organic deposits (fig 16).

## Climate

The climate in Sussex County has significantly affected soil forming processes. Climatic factors such as precipitation and temperature have influenced the existing plant and animal communities and the physical and chemical weathering of the parent material.

During the Wisconsin glacial, the glacier advanced over the county and obliterated any existing vegetation and soils. The cold temperatures most likely prohibited or significantly reduced the rate of chemical reactions in the rock and soil material that was displaced. As the temperature slowly increased, the glacier started to recede, and deposition of the till and glaciofluvial deposits began to take place. When the glacial ice retreated and the climate gradually warmed, deciduous forests eventually succeeded the preexisting vegetation.



**Figure 16.—An area of Catden mucky peat, 0 to 2 percent slopes. Comprised of organic soil material, Catden soils are found throughout Sussex County.**



The county currently has a humid, temperate climate, which has persisted for thousands of years. In this climatic environment, physical and chemical weathering of the parent material can occur along with the accumulation of organic matter, the decomposition of minerals, the formation and translocation of clay, the leaching of soluble compounds, and alternating periods of freezing and thawing.

## **Plants and Animals**

The vegetation under which a soil forms influences soil properties such as color, structure, reaction, and content and distribution of organic matter. Vegetation extracts water from the soil, recycles nutrients, and adds organic matter to the soil. Gases derived from root respiration combine with water to form acids that influence the weathering of minerals. Because of a lower content of organic matter, soils that formed under forest vegetation are generally lighter colored than those that formed under grasses.

Bacteria, fungi, and many other micro-organisms decompose organic matter and release nutrients to growing plants. They influence the formation of peds. Soil properties, such as drainage, temperature, and reaction, influence the type of microorganisms that live in the soil. Fungi are generally more active in the more acid soils, while bacteria are more active in the less acid soils.

Earthworms, insects, and small burrowing animals mix the soil and create small channels that influence soil aeration and the percolation of water. Earthworms help to incorporate crop residue or other organic matter into the soil. The organic material improves tilth. In areas that are well populated with earthworms, the leaf litter that accumulates on the soil in the fall is generally incorporated into the soil by the following spring. If the earthworm population is low, part of the leaf fall can remain on the surface of the soil for several years.

Human activities have significantly influenced soil formation. Native forests have been cleared and developed for farming and other uses. Cultivation has accelerated erosion on sloping soils, wet soils have been drained, and manure, lime, chemical fertilizer, and pesticides have been applied in cultivated areas. Cultivation has affected soil structure and compaction and lowered the content of organic matter. The development of land for urban uses has significantly influenced the soils in some areas.

## **Relief**

Relief influences soil formation mainly through its effect on runoff and erosion. To a lesser extent, it also influences soil temperature, the plant cover, depth to the water table, and the accumulation and removal of organic matter.

Because it causes differences in external soil drainage, relief can differentiate soils that formed in the same kind of parent material. Water that runs off the more sloping soils can collect in depressions or drainageways. Alden and Swartswood soils both formed in till derived from sandstone and conglomerate. The nearly level to steep Swartswood soils are well drained and found on upland summits and side slopes where external drainage is good. The nearly level Alden soils are very poorly drained and are found in depressions and drainageways that receive runoff from upland areas where soils such as Swartswood occur.

Relief varies greatly in Sussex County. On the alluvial deposits in the Upper Delaware Valley, the soils generally have broad, gentle slopes. Significant areas are nearly level. The glaciofluvial deposits in both the Upper Delaware Valley and Kittatinny Valley formed soils also having broad, gentle slopes, but with some steep side slopes present as well. Relief becomes more pronounced on the Wallpack Ridge, on Kittatinny Mountain, in the Highlands, and on some of the shale and

limestone areas in the Kittatinny Valley, which have bedrock-controlled topography consisting of steep side slopes and undulating summits. The differences in relief of the bedrock-controlled areas are due to the different resistances to destruction by the glacier of the various bedrock types. Hard bedrocks, like the conglomerate of the Shawangunk formation making up Kittatinny Mountain and the granites and gneiss making up the Highlands, were not broken apart and carried away by the glacier, although the glacier wore down and polished smooth these bedrock types as it passed over. This left behind the prominent ridge of Kittatinny Mountain and the high plateau of the Highlands (Salisbury, 1902; Volkert and others). Conversely, the shales and limestones in the Kittatinny Valley were less resistant to destruction, so the glacier gouged deep valleys into these bedrock types. Some of these valleys were subsequently filled with glaciofluvial deposits as the melting glacier receded (Witte, in press, Chapter 4). In parts of the Kittatinny Valley where the bedrock was not broken off and carried away, the glacier left behind rounded knolls of shale bedrock and jagged outcroppings of limestone bedrock. This also accounts for the presence of the Wallpack Ridge in the Upper Delaware Valley (fig. 17).

## Time

The length of time that the parent material has been exposed to soil forming processes influences the nature of the soil that forms. The youngest soils in Sussex County are the soils formed in postglacial alluvium. These are the Atherton, Colonie, Delaware, Scio, Unadilla, and Walkill soils. These soils tend to have weakly expressed horizons because the soil forming processes are interrupted with each new deposition of fresh alluvium.

Glaciers advanced over Sussex County during the Wisconsin Glaciation, which reached its maximum extent roughly 22,000 years ago. The glacier began to recede



**Figure 17.**—In the background the till-mantled Wallpack Ridge, upon which are found Wallpack soils, exhibits higher elevation and steeper slopes in contrast to the lower elevation and more gently sloping glaciofluvial deposits in the foreground, upon which are found Hazen and Hoosic soils.

approximately 19,000 years ago (Witte, in press, Chapter 4). Wisconsinan age deposits are geologically young, yet enough time has elapsed for the initial parent material to weather into soils that have distinct horizons. In some of the glaciofluvial deposit soils, specifically the Hazen, Hoosic, and Otisville soils, carbonates have been leached to a depth of about 6 to 10 feet. In several of the soils, specifically Hazen, Hibernia, Rockaway, Venango, Wallpack, and Wassaic, clay has been translocated from the A horizon to the B horizon.

## Processes of Soil Formation

Soil forms through complex processes that are grouped into four general categories. These are additions, losses, translocations, and transformations. These processes affect soil formation, although in differing degrees.

The accumulation of organic matter in the A horizon of the mineral soils in Sussex County is an example of an addition. This accumulation is the main reason for the dark color of the A horizon. The color of the parent material is uniform with increasing depth.

The leaching of silicate clay, iron, and/or aluminum from the E horizon in some of the soils in Sussex County formed in till is an example of a loss. The loss of these materials creates a horizon dominated by sand and silt-size particles that are relatively free of coatings, which can give these horizons a distinctive low chroma matrix color. The Arnot, Lackawanna, Lordstown, Swartswood, and Wurtsboro soils have E horizons with these low chroma matrix colors.

The translocation of clay from the A horizon to the B horizon in many of the soils in Sussex County is an example of a translocation. The A horizon or E horizon is a zone of eluviation, or loss. The B horizon is a zone of illuviation, or gain. In most of the soils, the B horizon contains more clay than does the A horizon. In the B horizon of the Hazen, Hibernia, Rockaway, Venango, Wallpack, and Wassaic soils, thin clay films are in pores and on faces of peds. This clay has been transferred from the A or E horizon.

An example of a transformation is the reduction and solubilization of ferrous iron. This process takes place under wet, saturated conditions in which there is no molecular oxygen. Gleying, or the reduction of iron, is evident in Alden, Atherton, Chippewa, Halsey, and Wallkill soils, which have dominantly low chroma subsoil matrix colors. These colors indicate the presence of reduced ferrous iron, which, in turn, implies wetness. Reduced iron is soluble, but it commonly has been moved short distances in the soils in Sussex County, stopping either in the horizon where it originated or in an underlying horizon. Part of this iron can be reoxidized and segregated in the form of bright yellow and red iron concentrations (Vepraskas, 1992).



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# Glossary

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Many of the terms relating to landforms, geology, and geomorphology are defined in more detail in the “National Soil Survey Handbook” (available in local offices of the Natural Resources Conservation Service or on the Internet).

**Aeolian soil material.** Earthy parent material accumulated through wind action; commonly refers to sandy material in dunes or to loess in blankets on the surface.

**Aeration, soil.** The exchange of air in soil with air from the atmosphere. The air in a well aerated soil is similar to that in the atmosphere; the air in a poorly aerated soil is considerably higher in carbon dioxide and lower in oxygen.

**Aggregate, soil.** Many fine particles held in a single mass or cluster. Natural soil aggregates, such as granules, blocks, or prisms, are called peds. Clods are aggregates produced by tillage or logging.

**Alluvium.** Unconsolidated material, such as gravel, sand, silt, clay, and various mixtures of these, deposited on land by running water.

**Apparent zone of saturation (in tables).** A saturated zone of water in the soil with a large vertical and areal extent; also called an “apparent water table”. The apparent zone of saturation is indicated by the level at which water stands in an uncased borehole after adequate time is allowed for adjustment in the surrounding soil.

**Aquic conditions.** Current soil wetness characterized by saturation, reduction, and redoximorphic features.

**Argillic horizon.** A subsoil horizon characterized by an accumulation of illuvial clay.

**Aspect.** The direction toward which a slope faces. Also called slope aspect.

**Available water capacity (available moisture capacity).** The capacity of soils to hold water available for use by most plants. It is commonly defined as the difference between the amount of soil water at field moisture capacity and the amount at wilting point. It is commonly expressed as inches of water per inch of soil. The capacity, in inches, in a 60-inch profile or to a limiting layer is expressed as:

Very low .....	0 to 3
Low .....	3 to 6
Moderate .....	6 to 9
High .....	9 to 12
Very high .....	more than 12

**Backslope.** The position that forms the steepest and generally linear, middle portion of a hillslope. In profile, backslopes are commonly bounded by a convex shoulder above and a concave footslope below.

**Base saturation.** The degree to which material having cation-exchange properties is saturated with exchangeable bases (sum of Ca, Mg, Na, and K), expressed as a percentage of the total cation-exchange capacity.

**Bedrock.** The solid rock that underlies the soil and other unconsolidated material or that is exposed at the surface.

- Bedrock-controlled topography.** A landscape where the configuration and relief of the landforms are determined or strongly influenced by the underlying bedrock.
- Boulders.** Rock fragments larger than 2 feet (60 centimeters) in diameter.
- Brush management.** Use of mechanical, chemical, or biological methods to make conditions favorable for reseeding or to reduce or eliminate competition from woody vegetation and thus allow understory grasses and forbs to recover. Brush management increases forage production and thus reduces the hazard of erosion. It can improve the habitat for some species of wildlife.
- Calcareous soil.** A soil containing enough calcium carbonate (commonly combined with magnesium carbonate) to effervesce visibly when treated with cold, dilute hydrochloric acid.
- Cation.** An ion carrying a positive charge of electricity. The common soil cations are calcium, potassium, magnesium, sodium, and hydrogen.
- Cation-exchange capacity.** The total amount of exchangeable cations that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. The term, as applied to soils, is synonymous with base-exchange capacity but is more precise in meaning.
- Channery soil material.** Soil material that has, by volume, 15 to 35 percent thin, flat fragments of sandstone, shale, slate, limestone, or schist as much as 6 inches (15 centimeters) along the longest axis. A single piece is called a chanter.
- Chemical treatment.** Control of unwanted vegetation through the use of chemicals.
- Clay.** As a soil separate, the mineral soil particles less than 0.002 millimeter in diameter. As a soil textural class, soil material that is 40 percent or more clay, less than 45 percent sand, and less than 40 percent silt.
- Clay film.** A thin coating of oriented clay on the surface of a soil aggregate or lining pores or root channels. Synonyms: clay coating, clay skin.
- Claypan.** A dense, compact, slowly permeable subsoil layer that contains much more clay than the overlying materials, from which it is separated by a sharply defined boundary. A claypan is commonly hard when dry and plastic and sticky when wet.
- Coarse textured soil.** Sand or loamy sand.
- Cobble (or cobblestone).** A rounded or partly rounded fragment of rock 3 to 10 inches (7.6 to 25 centimeters) in diameter.
- Cobble content (in tables).** Refers to the presence of cobbles below the soil surface layer occurring in sufficient amounts to create a limitation for a particular soil use.
- Cobbly soil material.** Material that has 15 to 35 percent, by volume, rounded or partially rounded rock fragments 3 to 10 inches (7.6 to 25 centimeters) in diameter. Very cobbly soil material has 35 to 60 percent of these rock fragments, and extremely cobbly soil material has more than 60 percent.
- COLE (coefficient of linear extensibility).** See Linear extensibility.
- Complex, soil.** A map unit of two or more kinds of soil or miscellaneous areas in such an intricate pattern or so small in area that it is not practical to map them separately at the selected scale of mapping. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas.
- Conglomerate.** A coarse grained, clastic sedimentary rock composed of rounded or subangular rock fragments more than 2 millimeters in diameter. It commonly has a matrix of sand and finer textured material. Conglomerate is the consolidated equivalent of gravel.
- Conservation cropping system.** Growing crops in combination with needed cultural and management practices. In a good conservation cropping system, the soil-improving crops and practices more than offset the effects of the soil-depleting crops and practices. Cropping systems are needed on all tilled soils. Soil-improving practices in a conservation cropping system include the use of rotations that contain grasses and legumes and the return of crop residue to the

soil. Other practices include the use of green manure crops of grasses and legumes, proper tillage, adequate fertilization, and weed and pest control.

**Conservation tillage.** A tillage system that does not invert the soil and that leaves a protective amount of crop residue on the surface throughout the year.

**Consistence, soil.** Refers to the degree of cohesion and adhesion of soil material and its resistance to deformation when ruptured. Consistence includes resistance of soil material to rupture and to penetration; plasticity, toughness, and stickiness of puddled soil material; and the manner in which the soil material behaves when subject to compression. Terms describing consistence are defined in the "Soil Survey Manual."

**Contour stripcropping.** Growing crops in strips that follow the contour. Strips of grass or close-growing crops are alternated with strips of clean-tilled crops or summer fallow.

**Control section.** The part of the soil on which classification is based. The thickness varies among different kinds of soil, but for many it is that part of the soil profile between depths of 10 inches and 40 or 80 inches.

**Corrosion (soil survey interpretations).** Soil-induced electrochemical or chemical action that dissolves or weakens concrete or uncoated steel.

**Cover crop.** A close-growing crop grown primarily to improve and protect the soil between periods of regular crop production, or a crop grown between trees and vines in orchards and vineyards.

**Crop residue management.** Returning crop residue to the soil, which helps to maintain soil structure, organic matter content, and fertility and helps to control erosion.

**Cropping system.** Growing crops according to a planned system of rotation and management practices.

**Culmination of the mean annual increment (CMAI).** The average annual increase per acre in the volume of a stand. Computed by dividing the total volume of the stand by its age. As the stand increases in age, the mean annual increment continues to increase until mortality begins to reduce the rate of increase. The point where the stand reaches its maximum annual rate of growth is called the culmination of the mean annual increment.

**Cutbanks cave(in tables).** The walls of excavations tend to cave in or slough.

**Delta.** A body of alluvium having a surface that is fan shaped and nearly flat; deposited at or near the mouth of a river or stream where it enters a body of relatively quiet water, generally a sea or lake.

**Depth, soil.** Generally, the thickness of the soil over bedrock. Very deep soils are more than 60 inches deep over bedrock; deep soils, 40 to 60 inches; moderately deep, 20 to 40 inches; shallow, 10 to 20 inches; and very shallow, less than 10 inches.

**Diversion (or diversion terrace).** A ridge of earth, generally a terrace, built to protect downslope areas by diverting runoff from its natural course.

**Drainage class (natural).** Refers to the frequency and duration of wet periods under conditions similar to those under which the soil formed. Alterations of the water regime by human activities, either through drainage or irrigation, are not a consideration unless they have significantly changed the morphology of the soil. Seven classes of natural soil drainage are recognized— *excessively drained*, *somewhat excessively drained*, *well drained*, *moderately well drained*, *somewhat poorly drained*, *poorly drained*, and *very poorly drained*. These classes are defined in the "Soil Survey Manual."

**Drainage, surface.** Runoff, or surface flow of water, from an area.

**Drainageway.** A general term for a course or channel along which water moves in draining an area. A term restricted to relatively small, linear depressions that at

some time move concentrated water and either do not have a defined channel or have only a small defined channel.

**Drift.** A general term applied to all mineral material (clay, silt, sand, gravel, and boulders) transported by a glacier and deposited directly by or from the ice or transported by running water emanating from a glacier. Drift includes unstratified material (till) that forms moraines and stratified deposits that form outwash plains, eskers, kames, varves, and glaciofluvial sediments. The term is generally applied to Pleistocene glacial deposits in areas that no longer contain glaciers.

**Drumlin.** A low, smooth, elongated oval hill, mound, or ridge of compact till that has a core of bedrock or drift. It commonly has a blunt nose facing the direction from which the ice approached and a gentler slope tapering in the other direction. The longer axis is parallel to the general direction of glacier flow. Drumlins are products of streamline (laminar) flow of glaciers, which molded the subglacial floor through a combination of erosion and deposition.

**Ecological site.** An area where climate, soil, and relief are sufficiently uniform to produce a distinct natural plant community. An ecological site is the product of all the environmental factors responsible for its development. It is typified by an association of species that differ from those on other ecological sites in kind and/or proportion of species or in total production.

**Eluviation.** The movement of material in true solution or colloidal suspension from one place to another within the soil. Soil horizons that have lost material through eluviation are eluvial; those that have received material are illuvial.

**Endosaturation.** A type of saturation of the soil in which all horizons between the upper boundary of saturation and a depth of 2 meters are saturated.

**Eolian deposit.** Sand-, silt-, or clay-sized clastic material transported and deposited primarily by wind, commonly in the form of a dune or a sheet of sand or loess.

**Episaturation.** A type of saturation indicating a perched water table in a soil in which saturated layers are underlain by one or more unsaturated layers within 2 meters of the surface.

**Erosion.** The wearing away of the land surface by water, wind, ice, or other geologic agents and by such processes as gravitational creep.

*Erosion (geologic).* Erosion caused by geologic processes acting over long geologic periods and resulting in the wearing away of mountains and the building up of such landscape features as flood plains and coastal plains. Synonym: natural erosion.

*Erosion (accelerated).* Erosion much more rapid than geologic erosion, mainly as a result of human or animal activities or of a catastrophe in nature, such as a fire, that exposes the surface.

**Esker.** A long, narrow, sinuous, steep-sided ridge of stratified sand and gravel deposited as the bed of a stream flowing in an ice tunnel within or below the ice (subglacial) or between ice walls on top of the ice of a wasting glacier and left behind as high ground when the ice melted. Eskers range in length from less than a kilometer to more than 160 kilometers and in height from 3 to 30 meters.

**Fertility, soil.** The quality that enables a soil to provide plant nutrients, in adequate amounts and in proper balance, for the growth of specified plants when light, moisture, temperature, tilth, and other growth factors are favorable.

**Fibric soil material (peat).** The least decomposed of all organic soil material. Peat contains a large amount of well preserved fiber that is readily identifiable according to botanical origin. Peat has the lowest bulk density and the highest water content at saturation of all organic soil material.

**Field moisture capacity.** The moisture content of a soil, expressed as a percentage of the oven-dry weight, after the gravitational, or free, water has drained away; the field moisture content 2 or 3 days after a soaking rain; also called *normal field capacity*, *normal moisture capacity*, or *capillary capacity*.

**Fine textured soil.** Sandy clay, silty clay, or clay.

**Flaggy soil material.** Material that has, by volume, 15 to 35 percent flagstones. Very flaggy soil material has 35 to 60 percent flagstones, and extremely flaggy soil material has more than 60 percent flagstones.

**Flagstone.** A thin fragment of sandstone, limestone, slate, shale, or (rarely) schist 6 to 15 inches (15 to 38 centimeters) long.

**Flood plain.** The nearly level plain that borders a stream and is subject to flooding unless protected artificially.

**Flood-plain landforms.** A variety of constructional and erosional features produced by stream channel migration and flooding. Examples include backswamps, flood-plain splays, meanders, meander belts, meander scrolls, oxbow lakes, and natural levees.

**Flood-plain step.** An essentially flat, terrace-like alluvial surface within a valley that is frequently covered by floodwater from the present stream; any approximately horizontal surface still actively modified by fluvial scour and/or deposition. May occur individually or as a series of steps.

**Fluvial.** Of or pertaining to rivers or streams; produced by stream or river action.

**Footslope.** The concave surface at the base of a hillslope. A footslope is a transition zone between upslope sites of erosion and transport (shoulders and backslopes) and downslope sites of deposition (toeslopes).

**Forb.** Any herbaceous plant not a grass or a sedge.

**Forest cover.** All trees and other woody plants (underbrush) covering the ground in a forest.

**Forest type.** A stand of trees similar in composition and development because of given physical and biological factors by which it may be differentiated from other stands.

**Fragipan.** A loamy, brittle subsurface horizon low in porosity and content of organic matter and low or moderate in clay but high in silt or very fine sand. A fragipan appears cemented and restricts roots. When dry, it is hard or very hard and has a higher bulk density than the horizon or horizons above. When moist, it is firm or very firm and tends to rupture suddenly under pressure rather than to deform slowly.

**Genesis, soil.** The mode of origin of the soil. Refers especially to the processes or soil-forming factors responsible for the formation of the solum, or true soil, from the unconsolidated parent material.

**Glaciofluvial deposits.** Material moved by glaciers and subsequently sorted and deposited by streams flowing from the melting ice. The deposits are stratified and occur in the form of outwash plains, valley trains, deltas, kames, eskers, and kame terraces.

**Glaciolacustrine deposits.** Material ranging from fine clay to sand derived from glaciers and deposited in glacial lakes mainly by glacial meltwater. Many deposits are bedded or laminated.

**Gleyed soil.** Soil that formed under poor drainage, resulting in the reduction of iron and other elements in the profile and in gray colors.

**Gravel.** Rounded or angular fragments of rock as much as 3 inches (7.6 centimeters) in diameter. An individual piece is a pebble.

**Gravelly soil material.** Material that has 15 to 35 percent, by volume, rounded or angular rock fragments, not prominently flattened, as much as 3 inches (7.6 centimeters) in diameter.

**Green manure crop** (agronomy). A soil-improving crop grown to be plowed under in an early stage of maturity or soon after maturity.

**Ground moraine.** (a) Commonly an extensive, low relief area of till, having an uneven or undulating surface, and commonly bounded on the distal end by a recessional or end moraine; (b) A layer of poorly sorted rock and mineral debris (till) dragged

along, in, on, or beneath a glacier and deposited by processes including basal lodgement and release from downwasting stagnant ice by ablation (USDA-NRCS, NSSH Part 629).

**Ground water.** Water filling all the unblocked pores of the material below the water table.

**Hard bedrock.** Bedrock that cannot be excavated except by blasting or by the use of special equipment that is not commonly used in construction.

**Hard to reclaim (in tables).** Reclamation is difficult after the removal of soil for construction and other uses. Revegetation and erosion control are extremely difficult.

**Hemic soil material (mucky peat).** Organic soil material intermediate in degree of decomposition between the less decomposed fibric material and the more decomposed sapric material.

**Hill.** A generic term for an elevated area of the land surface, rising as much as 1,000 feet above surrounding lowlands, commonly of limited summit area and having a well defined outline. Slopes are generally more than 15 percent. The distinction between a hill and a mountain is arbitrary and may depend on local usage.

**Hillslope.** A generic term for the steeper part of a hill between its summit and the drainage line, valley flat, or depression floor at the base of a hill.

**Horizon, soil.** A layer of soil, approximately parallel to the surface, having distinct characteristics produced by soil-forming processes. In the identification of soil horizons, an uppercase letter represents the major horizons. Numbers or lowercase letters that follow represent subdivisions of the major horizons. An explanation of the subdivisions is given in the "Soil Survey Manual." The major horizons of mineral soil are as follows:

*O horizon.*—An organic layer of fresh and decaying plant residue.

*A horizon.*—The mineral horizon at or near the surface in which an accumulation of humified organic matter is mixed with the mineral material. Also, a plowed surface horizon, most of which was originally part of a B horizon.

*E horizon.*—The mineral horizon in which the main feature is loss of silicate clay, iron, aluminum, or some combination of these.

*B horizon.*—The mineral horizon below an A horizon. The B horizon is in part a layer of transition from the overlying A to the underlying C horizon. The B horizon also has distinctive characteristics, such as (1) accumulation of clay, sesquioxides, humus, or a combination of these; (2) prismatic or blocky structure; (3) redder or browner colors than those in the A horizon; or (4) a combination of these.

*C horizon.*—The mineral horizon or layer, excluding indurated bedrock, that is little affected by soil-forming processes and does not have the properties typical of the overlying soil material. The material of a C horizon may be either like or unlike that in which the solum formed. If the material is known to differ from that in the solum, an Arabic numeral, commonly a 2, precedes the letter C.

*Cr horizon.*—Soft, consolidated bedrock beneath the soil.

*R layer.*—Consolidated bedrock beneath the soil. The bedrock commonly underlies a C horizon, but it can be directly below an A or a B horizon.

**Humus.** The well decomposed, more or less stable part of the organic matter in mineral soils.

**Hydrologic groups.** Refers to soils grouped according to their runoff potential. The soil properties that influence this potential are those that affect the minimum rate of water infiltration on a bare soil during periods after prolonged wetting when the soil is not frozen. These properties are depth to a seasonal high water table, the infiltration rate and permeability after prolonged wetting, and depth to a very slowly permeable layer. The slope and the kind of plant cover are not considered but are separate factors in predicting runoff.

**Igneous rock.** Rock that was formed by cooling and solidification of magma and that has not been changed appreciably by weathering since its formation. Major varieties include plutonic and volcanic rock (e.g., andesite, basalt, and granite).

**Illuviation.** The movement of soil material from one horizon to another in the soil profile. Generally, material is removed from an upper horizon and deposited in a lower horizon.

**Impervious soil.** A soil through which water, air, or roots penetrate slowly or not at all. No soil is absolutely impervious to air and water all the time.

**Inner terrace.** Secondary or “abandoned” meltwater or stream terrace above but close to the floodplain (Witte, in press, Chapters 4 and 5).

**Infiltration.** The downward entry of water into the immediate surface of soil or other material, as contrasted with percolation, which is movement of water through soil layers or material.

**Infiltration rate.** The rate at which water penetrates the surface of the soil at any given instant, usually expressed in inches per hour. The rate can be limited by the infiltration capacity of the soil or the rate at which water is applied at the surface.

**Intermittent stream.** A stream, or reach of a stream, that does not flow year-round but that is commonly dry for 3 or more months out of 12 and whose channel is generally below the local water table. It flows only during wet periods or when it receives ground-water discharge or long, continued contributions from melting snow or other surface and shallow subsurface sources.

**Iron depletions.** See Redoximorphic features.

**Irrigation.** Application of water to soils to assist in production of crops. Methods of irrigation are:

*Basin.*—Water is applied rapidly to nearly level plains surrounded by levees or dikes.

*Border.*—Water is applied at the upper end of a strip in which the lateral flow of water is controlled by small earth ridges called border dikes, or borders.

*Controlled flooding.*—Water is released at intervals from closely spaced field ditches and distributed uniformly over the field.

*Corrugation.*—Water is applied to small, closely spaced furrows or ditches in fields of close-growing crops or in orchards so that it flows in only one direction.

*Drip (or trickle).*—Water is applied slowly and under low pressure to the surface of the soil or into the soil through such applicators as emitters, porous tubing, or perforated pipe.

*Furrow.*—Water is applied in small ditches made by cultivation implements. Furrows are used for tree and row crops.

*Sprinkler.*—Water is sprayed over the soil surface through pipes or nozzles from a pressure system.

*Subirrigation.*—Water is applied in open ditches or tile lines until the water table is raised enough to wet the soil.

*Wild flooding.*—Water, released at high points, is allowed to flow onto an area without controlled distribution.

**Kame.** A low mound, knob, hummock, or short irregular ridge composed of stratified sand and gravel deposited by a subglacial stream as a fan or delta at the margin of a melting glacier; by a supraglacial stream in a low place or hole on the surface of the glacier; or as a ponded deposit on the surface or at the margin of stagnant ice.

**Kame terrace.** A terrace-like ridge consisting of stratified sand and gravel (a) deposited by a meltwater stream flowing between a melting glacier and a higher valley wall or lateral moraine, and (b) left standing after the disappearance of the ice. It is commonly pitted with “kettles” and has an irregular ice-contact slope (USDA-NRCS, NSSH Part 629).

**K<sub>sat</sub>.** Saturated hydraulic conductivity. (See Permeability.)

- Lacustrine deposit.** Material deposited in lake water and exposed when the water level is lowered or the elevation of the land is raised.
- Lake plain.** A nearly level surface marking the floor of an extinct lake filled by well sorted, generally fine textured, stratified deposits, commonly containing varves.
- Lake terrace.** A narrow shelf, partly cut and partly built, produced along a lakeshore in front of a scarp line of low cliffs and later exposed when the water level falls.
- Leaching.** The removal of soluble material from soil or other material by percolating water.
- Linear extensibility.** Refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. Linear extensibility is used to determine the shrink-swell potential of soils. It is an expression of the volume change between the water content of the clod at  $\frac{1}{3}$ - or  $\frac{1}{10}$ -bar tension (33kPa or 10kPa tension) and oven dryness. Volume change is influenced by the amount and type of clay minerals in the soil. The volume change is the percent change for the whole soil. If it is expressed as a fraction, the resulting value is COLE, coefficient of linear extensibility.
- Liquid limit.** The moisture content at which the soil passes from a plastic to a liquid state.
- Loam.** Soil material that is 7 to 27 percent clay particles, 28 to 50 percent silt particles, and less than 52 percent sand particles.
- Low strength.** The soil is not strong enough to support loads.
- Mechanical treatment.** Use of mechanical equipment for seeding, brush management, and other management practices.
- Medium textured soil.** Very fine sandy loam, loam, silt loam, or silt.
- Metamorphic rock.** Rock of any origin altered in mineralogical composition, chemical composition, or structure by heat, pressure, and movement at depth in the earth's crust. Nearly all such rocks are crystalline.
- Mineral soil.** Soil that is mainly mineral material and low in organic material. Its bulk density is more than that of organic soil.
- Minimum tillage.** Only the tillage essential to crop production and prevention of soil damage.
- Miscellaneous area.** A kind of map unit that has little or no natural soil and supports little or no vegetation.
- Moderately coarse textured soil.** Coarse sandy loam, sandy loam, or fine sandy loam.
- Moderately fine textured soil.** Clay loam, sandy clay loam, or silty clay loam.
- Mollic epipedon.** A thick, dark, humus-rich surface horizon (or horizons) that has high base saturation and pedogenic soil structure. It may include the upper part of the subsoil.
- Moraine.** In terms of glacial geology, a mound, ridge, or other topographically distinct accumulation of unsorted, unstratified drift, predominantly till, deposited primarily by the direct action of glacial ice in a variety of landforms. Also, a general term for a landform composed mainly of till (except for kame moraines, which are composed mainly of stratified outwash) that has been deposited by a glacier. Some types of moraines are disintegration, end, ground, kame, lateral, recessional, and terminal.
- Morphology, soil.** The physical makeup of the soil, including the texture, structure, porosity, consistence, color, and other physical, mineral, and biological properties of the various horizons, and the thickness and arrangement of those horizons in the soil profile.
- Mottling, soil.** Irregular spots of different colors that vary in number and size. Descriptive terms are as follows: abundance—*few*, *common*, and *many*; size—*fine*, *medium*, and *coarse*; and contrast—*faint*, *distinct*, and *prominent*. The size measurements are of the diameter along the greatest dimension. *Fine* indicates



less than 5 millimeters (about 0.2 inch); *medium*, from 5 to 15 millimeters (about 0.2 to 0.6 inch); and *coarse*, more than 15 millimeters (about 0.6 inch).

**Mountain.** A generic term for an elevated area of the land surface, rising more than 1,000 feet (300 meters) above surrounding lowlands, commonly of restricted summit area (relative to a plateau) and generally having steep sides. A mountain can occur as a single, isolated mass or in a group forming a chain or range. Mountains are formed primarily by tectonic activity and/or volcanic action but can also be formed by differential erosion.

**Muck.** Dark, finely divided, well decomposed organic soil material. (See Sapric soil material.)

**Munsell notation.** A designation of color by degrees of three simple variables—hue, value, and chroma. For example, a notation of 10YR 6/4 is a color with hue of 10YR, value of 6, and chroma of 4.

**Neutral soil.** A soil having a pH value of 6.6 to 7.3. (See Reaction, soil.)

**Nutrient, plant.** Any element taken in by a plant essential to its growth. Plant nutrients are mainly nitrogen, phosphorus, potassium, calcium, magnesium, sulfur, iron, manganese, copper, boron, and zinc obtained from the soil and carbon, hydrogen, and oxygen obtained from the air and water.

**Organic matter.** Plant and animal residue in the soil in various stages of decomposition. The content of organic matter in the surface layer is described as follows:

Very low .....	less than 0.5 percent
Low .....	0.5 to 1.0 percent
Moderately low .....	1.0 to 2.0 percent
Moderate .....	2.0 to 4.0 percent
High .....	4.0 to 8.0 percent
Very high .....	more than 8.0 percent

**Outer terrace.** Secondary or “abandoned” meltwater or stream terrace above but away from the floodplain (Witte, in press, Chapters 4 and 5).

**Outwash.** Stratified and sorted sediments (chiefly sand and gravel) removed or “washed out” from a glacier by meltwater streams and deposited in front of or beyond the end moraine or the margin of a glacier. The coarser material is deposited nearer to the ice.

*Outwash delta.*—A relict (inactive) delta composed of glaciofluvial sediments formed where a sediment laden outwash river emptied into an open lake, commonly a proglacial lake. Sediment attributes include very gently dipping topset beds (coarser textures) and steeply dipping foreset beds (finer textures).

*Outwash fan.*—A fan-shaped accumulation of outwash deposited by meltwater streams in front of the end or recessional moraine of a glacier. Coalescing outwash fans form an outwash plain.

*Outwash plain.*—An extensive lowland area of coarse textured glaciofluvial material. An outwash plain is commonly smooth; where pitted, it generally is low in relief.

**Pan.** A compact, dense layer in a soil that impedes the movement of water and the growth of roots. For example, *hardpan*, *fragipan*, *claypan*, *plowpan*, and *traffic pan*.

**Parent material.** The unconsolidated organic and mineral material in which soil forms.

**Peat.** Unconsolidated material, largely undecomposed organic matter, that has accumulated under excess moisture. (See Fibric soil material.)

**Ped.** An individual natural soil aggregate, such as a granule, a prism, or a block.

**Pedon.** The smallest volume that can be called “a soil.” A pedon is three dimensional and large enough to permit study of all horizons. Its area ranges from about 10 to

100 square feet (1 square meter to 10 square meters), depending on the variability of the soil.

**Percolation.** The movement of water through the soil.

**Permeability.** The quality of the soil that enables water or air to move downward through the profile. The rate at which a saturated soil transmits water is accepted as a measure of this quality. In soil physics, the rate is referred to as “saturated hydraulic conductivity,” which is defined in the “Soil Survey Manual.” In line with conventional usage in the engineering profession and with traditional usage in published soil surveys, this rate of flow continues to be expressed as “permeability.” Terms describing permeability, measured in inches per hour, are as follows:

Impermeable .....	less than 0.0015 inch
Very slow .....	0.0015 to 0.06 inch
Slow .....	0.06 to 0.2 inch
Moderately slow .....	0.2 to 0.6 inch
Moderate .....	0.6 inch to 2.0 inches
Moderately rapid .....	2.0 to 6.0 inches
Rapid .....	6.0 to 20 inches
Very rapid .....	more than 20 inches

**pH value.** A numerical designation of acidity and alkalinity in soil. (See Reaction, soil.)

**Phase, soil.** A subdivision of a soil series based on features that affect its use and management, such as slope, stoniness, and flooding.

**Piping** (in tables). Formation of subsurface tunnels or pipelike cavities by water moving through the soil.

**Plastic limit.** The moisture content at which a soil changes from semisolid to plastic.

**Plasticity index.** The numerical difference between the liquid limit and the plastic limit; the range of moisture content within which the soil remains plastic.

**Plateau (geomorphology).** A comparatively flat area of great extent and elevation; specifically, an extensive land region that is considerably elevated (more than 100 meters) above the adjacent lower lying terrain, is commonly limited on at least one side by an abrupt descent, and has a flat or nearly level surface. A comparatively large part of a plateau surface is near summit level.

**Plowpan.** A compacted layer formed in the soil directly below the plowed layer.

**Ponding.** Standing water on soils in closed depressions. Unless the soils are artificially drained, the water can be removed only by percolation or evapotranspiration.

**Poor filter (in tables).** Because of rapid permeability, the soil may not adequately filter effluent from a waste disposal system.

**Poorly graded.** Refers to a coarse grained soil or soil material consisting mainly of particles of nearly the same size. Because there is little difference in size of the particles, density can be increased only slightly by compaction.

**Productivity, soil.** The capability of a soil for producing a specified plant or sequence of plants under specific management.

**Profile, soil.** A vertical section of the soil extending through all its horizons and into the parent material.

**Proglacial lake.** A type of glacial lake which formed just beyond the margin of an advancing or retreating glacier; generally in direct contact with the ice.

**Reaction, soil.** A measure of acidity or alkalinity of a soil, expressed as pH values. A soil that tests to pH 7.0 is described as precisely neutral in reaction because it is neither acid nor alkaline. The degrees of acidity or alkalinity, expressed as pH values, are:

Ultra acid .....	less than 3.5
Extremely acid .....	3.5 to 4.4
Very strongly acid .....	4.5 to 5.0

Strongly acid .....	5.1 to 5.5
Moderately acid .....	5.6 to 6.0
Slightly acid .....	6.1 to 6.5
Neutral .....	6.6 to 7.3
Slightly alkaline .....	7.4 to 7.8
Moderately alkaline .....	7.9 to 8.4
Strongly alkaline .....	8.5 to 9.0
Very strongly alkaline .....	9.1 and higher

**Recessional moraine.** An end or lateral moraine, built during a temporary but significant halt in the final retreat of a glacier. Also, a moraine built during a minor readvance of the ice front during a period of general recession.

**Red beds.** Sedimentary strata that are mainly red and are made up largely of sandstone and shale.

**Redoximorphic concentrations.** See Redoximorphic features.

**Redoximorphic depletions.** See Redoximorphic features.

**Redoximorphic features.** Redoximorphic features are associated with wetness and result from alternating periods of reduction and oxidation of iron and manganese compounds in the soil. Reduction occurs during saturation with water, and oxidation occurs when the soil is not saturated. Characteristic color patterns are created by these processes. The reduced iron and manganese ions may be removed from a soil if vertical or lateral fluxes of water occur, in which case there is no iron or manganese precipitation in that soil. Wherever the iron and manganese are oxidized and precipitated, they form either soft masses or hard concretions or nodules. Movement of iron and manganese as a result of redoximorphic processes in a soil may result in redoximorphic features that are defined as follows:

1. Redoximorphic concentrations.—These are zones of apparent accumulation of iron-manganese oxides, including:
  - A. Nodules and concretions, which are cemented bodies that can be removed from the soil intact. Concretions are distinguished from nodules on the basis of internal organization. A concretion typically has concentric layers that are visible to the naked eye. Nodules do not have visible organized internal structure; *and*
  - B. Masses, which are noncemented concentrations of substances within the soil matrix; *and*
  - C. Pore linings, i.e., zones of accumulation along pores that may be either coatings on pore surfaces or impregnations from the matrix adjacent to the pores.
2. Redoximorphic depletions.—These are zones of low chroma (chromas less than those in the matrix) where either iron-manganese oxides alone or both iron-manganese oxides and clay have been stripped out, including:
  - A. Iron depletions, i.e., zones that contain low amounts of iron and manganese oxides but have a clay content similar to that of the adjacent matrix; *and*
  - B. Clay depletions, i.e., zones that contain low amounts of iron, manganese, and clay (often referred to as silt coatings or skeletons).
3. Reduced matrix.—This is a soil matrix that has low chroma *in situ* but undergoes a change in hue or chroma within 30 minutes after the soil material has been exposed to air.

**Reduced matrix.** See Redoximorphic features.

**Relief.** The relative difference in elevation between the upland summits and the lowlands or valleys of a given region.

**Ridge.** A long, narrow elevation of the land surface, usually sharp crested with steep

sides and forming an extended upland between valleys. The term is used in areas of both hill and mountain relief.

**Rill.** A very small, steep-sided channel resulting from erosion and cut in unconsolidated materials by concentrated but intermittent flow of water. A rill generally is not an obstacle to wheeled vehicles and is shallow enough to be smoothed over by ordinary tillage.

**Riser.** The vertical or steep side slope (e.g., escarpment) of terraces, flood-plain steps, or other stepped landforms; commonly a recurring part of a series of natural, steplike landforms, such as successive stream terraces.

**Rock fragments.** Rock or mineral fragments having a diameter of 2 millimeters or more; for example, pebbles, cobbles, stones, and boulders.

**Root zone.** The part of the soil that can be penetrated by plant roots.

**Runoff.** The precipitation discharged into stream channels from an area. The water that flows off the surface of the land without sinking into the soil is called surface runoff. Water that enters the soil before reaching surface streams is called ground-water runoff or seepage flow from ground water.

**Sand.** As a soil separate, individual rock or mineral fragments from 0.05 millimeter to 2.0 millimeters in diameter. Most sand grains consist of quartz. As a soil textural class, a soil that is 85 percent or more sand and not more than 10 percent clay.

**Sandstone.** Sedimentary rock containing dominantly sand-sized particles.

**Sapric soil material (muck).** The most highly decomposed of all organic soil material. Muck has the least amount of plant fiber, the highest bulk density, and the lowest water content at saturation of all organic soil material.

**Saturated hydraulic conductivity ( $K_{sat}$ ).** See Permeability.

**Saturated zone (in tables).** The portion of a soil that is saturated by water; also called the “water table”.

**Saturation.** Wetness characterized by zero or positive pressure of the soil water. Under conditions of saturation, the water will flow from the soil matrix into an unlined auger hole.

**Sedimentary rock.** A consolidated deposit of clastic particles, chemical precipitates, or organic remains accumulated at or near the surface of the earth under normal low temperature and pressure conditions. Sedimentary rocks include consolidated equivalents of alluvium, colluvium, drift, and eolian, lacustrine, and marine deposits. Examples are sandstone, siltstone, mudstone, claystone, shale, conglomerate, limestone, dolomite, and coal.

**Series, soil.** A group of soils that have profiles that are almost alike, except for differences in texture of the surface layer. All the soils of a series have horizons that are similar in composition, thickness, and arrangement.

**Shale.** Sedimentary rock that formed by the hardening of a deposit of clay, silty clay, or silty clay loam and that has a tendency to split into thin layers.

**Shoulder.** The convex, erosional surface near the top of a hillslope. A shoulder is a transition from summit to backslope.

**Shrink-swell (in tables).** The shrinking of soil when dry and the swelling when wet. Shrinking and swelling can damage roads, dams, building foundations, and other structures. It can also damage plant roots.

**Side slope (geomorphology).** A geomorphic component of hills consisting of a laterally planar area of a hillside. The overland waterflow is predominantly parallel. Side slopes are dominantly colluvium and slope-wash sediments.

**Silica.** A combination of silicon and oxygen. The mineral form is called quartz.

**Silt.** As a soil separate, individual mineral particles that range in diameter from the upper limit of clay (0.002 millimeter) to the lower limit of very fine sand (0.05 millimeter). As a soil textural class, soil that is 80 percent or more silt and less than 12 percent clay.

**Similar soils.** Soils that share limits of diagnostic criteria, behave and perform in a similar manner, and have similar conservation needs or management requirements for the major land uses in the survey area.

**Site index.** A designation of the quality of a forest site based on the height of the dominant stand at an arbitrarily chosen age. For example, if the average height attained by dominant and codominant trees in a fully stocked stand at the age of 50 years is 75 feet, the site index is 75.

**Slope.** The inclination of the land surface from the horizontal. Percentage of slope is the vertical distance divided by horizontal distance, then multiplied by 100. Thus, a slope of 20 percent is a drop of 20 feet in 100 feet of horizontal distance.

**Slow refill** (in tables). The slow filling of ponds, resulting from restricted permeability in the soil.

**Soft bedrock.** Bedrock that can be excavated with trenching machines, backhoes, small rippers, and other equipment commonly used in construction.

**Soil.** A natural, three-dimensional body at the earth's surface. It is capable of supporting plants and has properties resulting from the integrated effect of climate and living matter acting on earthy parent material, as conditioned by relief and by the passage of time.

**Soil separates.** Mineral particles less than 2 millimeters in equivalent diameter and ranging between specified size limits. The names and sizes, in millimeters, of separates recognized in the United States are as follows:

Very coarse sand .....	2.0 to 1.0
Coarse sand .....	1.0 to 0.5
Medium sand .....	0.5 to 0.25
Fine sand .....	0.25 to 0.10
Very fine sand .....	0.10 to 0.05
Silt .....	0.05 to 0.002
Clay .....	less than 0.002

**Solum.** The upper part of a soil profile, above the C horizon, in which the processes of soil formation are active. The solum in soil consists of the A, E, and B horizons. Generally, the characteristics of the material in these horizons are unlike those of the material below the solum. The living roots and plant and animal activities are largely confined to the solum.

**Stone content (in tables).** Refers to the presence of stones below the soil surface layer occurring in sufficient amounts to create a limitation for a particular soil use.

**Stones.** Rock fragments 10 to 24 inches (25 to 60 centimeters) in diameter if rounded or 15 to 24 inches (38 to 60 centimeters) in length if flat.

**Stoniness (in tables).** Classes based on the relative proportion of stones at or near the soil surface. Used as a phase distinction in mapping soils.

**Stony.** Refers to a soil containing stones in numbers that interfere with or prevent tillage.

**Stream terrace.** One of a series of platforms in a stream valley, flanking and more or less parallel to the stream channel, originally formed near the level of the stream; represents the remnants of an abandoned flood plain, stream bed, or valley floor produced during a former state of fluvial erosion or deposition.

**Stripcropping.** Growing crops in a systematic arrangement of strips or bands that provide vegetative barriers to wind erosion and water erosion.

**Structure, soil.** The arrangement of primary soil particles into compound particles or aggregates. The principal forms of soil structure are—*platy* (laminated), *prismatic* (vertical axis of aggregates longer than horizontal), *columnar* (prisms with rounded tops), *blocky* (angular or subangular), and *granular*. *Structureless* soils are either *single grained* (each grain by itself, as in dune sand) or *massive* (the particles adhering without any regular cleavage, as in many hardpans).

**Subsoil.** Technically, the B horizon; roughly, the part of the solum below plow depth.

**Substratum.** The part of the soil below the solum.

**Subsurface layer.** Any surface soil horizon (A, E, AB, or EB) below the surface layer.

**Summit.** The topographically highest position of a hillslope. It has a nearly level (planar or only slightly convex) surface.

**Surface layer.** The soil ordinarily moved in tillage, or its equivalent in uncultivated soil, ranging in depth from 4 to 10 inches (10 to 25 centimeters). Frequently designated as the “plow layer,” or the “Ap horizon.”

**Talus.** Rock fragments of any size or shape (commonly coarse and angular) derived from and lying at the base of a cliff or very steep rock slope. The accumulated mass of such loose broken rock formed chiefly by falling, rolling, or sliding.

**Taxadjuncts.** Soils that cannot be classified in a series recognized in the classification system. Such soils are named for a series they strongly resemble and are designated as taxadjuncts to that series because they differ in ways too small to be of consequence in interpreting their use and behavior. Soils are recognized as taxadjuncts only when one or more of their characteristics are slightly outside the range defined for the family of the series for which the soils are named.

**Terrace** (conservation). An embankment, or ridge, constructed across sloping soils on the contour or at a slight angle to the contour. The terrace intercepts surface runoff so that water soaks into the soil or flows slowly to a prepared outlet. A terrace in a field generally is built so that the field can be farmed. A terrace intended mainly for drainage has a deep channel that is maintained in permanent sod.

**Terrace** (geomorphology). A steplike surface, bordering a valley floor or shoreline, that represents the former position of a flood plain, lake, or seashore. The term is usually applied both to the relatively flat summit surface (tread) that was cut or built by stream or wave action and to the steeper descending slope (scarp or riser) that has graded to a lower base level of erosion.

**Terracettes.** Small, irregular steplike forms on steep hillslopes, especially in pasture, formed by creep or erosion of surficial materials that may be induced or enhanced by trampling of livestock, such as sheep or cattle.

**Texture, soil.** The relative proportions of sand, silt, and clay particles in a mass of soil. The basic textural classes, in order of increasing proportion of fine particles, are *sand*, *loamy sand*, *sandy loam*, *loam*, *silt loam*, *silt*, *sandy clay loam*, *clay loam*, *silty clay loam*, *sandy clay*, *silty clay*, and *clay*. The sand, loamy sand, and sandy loam classes may be further divided by specifying “coarse,” “fine,” or “very fine.”

**Thin layer** (in tables). Otherwise suitable soil material that is too thin for the specified use.

**Till.** Dominantly unsorted and nonstratified drift, generally unconsolidated and deposited directly by a glacier without subsequent reworking by meltwater, and consisting of a heterogeneous mixture of clay, silt, sand, gravel, stones, and boulders; rock fragments of various lithologies are embedded within a finer matrix that can range from clay to sandy loam.

**Till plain.** An extensive area of level to gently undulating soils underlain predominantly by till and bounded at the distal end by subordinate recessional or end moraines.

**Tilth, soil.** The physical condition of the soil as related to tillage, seedbed preparation, seedling emergence, and root penetration.

**Toeslope.** The gently inclined surface at the base of a hillslope. Toeslopes in profile are commonly gentle and linear and are constructional surfaces forming the lower part of a hillslope continuum that grades to valley or closed-depression floors.

- Topsoil.** The upper part of the soil, which is the most favorable material for plant growth. It is ordinarily rich in organic matter and is used to topdress roadbanks, lawns, and land affected by mining.
- Trace elements.** Chemical elements, for example, zinc, cobalt, manganese, copper, and iron, in soils in extremely small amounts. They are essential to plant growth.
- Tread.** The flat to gently sloping, topmost, laterally extensive slope of terraces, flood-plain steps, or other stepped landforms; commonly a recurring part of a series of natural steplike landforms, such as successive stream terraces.
- Tree-tip.** The process of uprooting and tipping over of trees by strong winds, commonly resulting in a small depression from which the root-ball is displaced and an adjacent mound from the sediments subsequently sloughed from the root ball. Most prevalent in shallow forested soils over a restrictive layer (e.g. bedrock). (Reference: USDA-NRCS, NSSH Part 629)
- Upland.** An informal, general term for the higher ground of a region, in contrast with a low-lying adjacent area, such as a valley or plain, or for land at a higher elevation than the flood plain or low stream terrace; land above the footslope zone of the hillslope continuum.
- Valley train.** A long narrow body of outwash confined within a valley beyond a glacier; it may, or may not, emerge from the valley and join an outwash plain (USDA-NRCS, NSSH Part 629).
- Water table (apparent or regional).** A saturated zone of water in the soil with a large vertical and areal extent. The apparent water table is indicated by the level at which water stands in an uncased borehole after adequate time is allowed for adjustment in the surrounding soil.
- Water table (perched).** A saturated zone of water in the soil standing above an unsaturated zone. The unsaturated zone is typically some type of restrictive layer, such as a fragipan.
- Weathering.** All physical disintegration, chemical decomposition, and biologically induced changes in rocks or other deposits at or near the earth's surface by atmospheric or biologic agents or by circulating surface waters but involving essentially no transport of the altered material.
- Well graded.** Refers to soil material consisting of coarse grained particles that are well distributed over a wide range in size or diameter. Such soil normally can be easily increased in density and bearing properties by compaction. Contrasts with poorly graded soil.
- Wilting point (or permanent wilting point).** The moisture content of soil, on an oven-dry basis, at which a plant (specifically a sunflower) wilts so much that it does not recover when placed in a humid, dark chamber.





## Tables

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Table 1.--Temperature and Precipitation  
(Recorded in the period 1971-2000 at Newton, Saint Paul's Abbey, NJ6177)

Month	Temperature										Precipitation									
	Average daily maximum	Average daily minimum	Average daily	Average	°F	°F	°F	°F	°F	°F	Maximum higher than--	Minimum temperature lower than--	Average number of growing degree days*	Units	In	In	In	2 years in 10 will have--	Average	Average of 10 years
January-----	34.4	14.4	24.4	61	-13	1	3.60	1.75	5.20	6										
February----	37.3	15.9	26.6	63	-10	0	2.82	1.79	3.75	6										
March-----	47.0	25.5	36.3	77	2	15	3.62	2.40	4.73	6										
April-----	58.6	35.3	46.9	85	20	64	4.05	2.49	5.46	7										
May-----	69.9	45.0	57.5	90	28	249	4.43	2.52	6.12	7										
June-----	78.0	54.2	66.1	93	37	484	4.53	2.67	6.19	7										
July-----	83.0	59.0	71.0	96	43	651	4.39	2.21	6.29	6										
August-----	81.0	57.2	69.1	93	40	593	4.44	2.66	6.04	6										
September---	73.1	48.8	60.9	91	31	334	4.56	2.44	6.42	6										
October-----	62.0	37.0	49.5	81	20	93	3.77	2.21	5.16	5										
November----	50.3	29.5	39.9	74	12	20	3.91	2.20	5.42	6										
December----	39.2	21.0	30.1	63	-3	2	3.46	1.66	5.02	6										
Yearly:																				
Average---	59.5	36.9	48.2	---	---	---	---	---	---	---										
Extreme---	101	-26	---	97	-15	---	---	---	---	---										
Total-----	---	---	---	---	---	2505	47.57	28.81	55.85	74										

\* A growing degree day is a unit of heat available for plant growth. It can be calculated by adding maximum and minimum daily temperatures, dividing the sum by 2, and subtracting the temperature below which is minimal for the principal crops in the area (50 degrees F).

Table 2.—Freeze Dates in Spring and Fall  
(Recorded in the period 1971-2000 at Newton, Saint Paul's  
Abbey, NJ6177)

Probability	Temperature		
	24 °F or lower	28 °F or lower	32 °F or lower
Last freezing temperature in spring:			
1 year in 10 later than--	April 23	May 6	May 18
2 years in 10 later than--	April 18	May 2	May 14
5 years in 10 later than--	April 8	April 24	May 6
First freezing temperature in fall:			
1 year in 10 earlier than--	October 9	October 2	September 18
2 years in 10 earlier than--	October 14	October 7	September 23
5 years in 10 earlier than--	October 25	October 16	October 2

Table 3.—Growing Season

(Recorded in the period 1971-2000 at Newton, Saint  
Paul's Abbey, NJ6177)

Probability	Daily Minimum Temperature During growing season		
	Higher than 24 °F	Higher than 28 °F	Higher than 32 °F
	<u>Days</u>	<u>Days</u>	<u>Days</u>
9 years in 10	178	156	128
8 years in 10	185	162	135
5 years in 10	199	173	148
2 years in 10	212	184	161
1 year in 10	220	190	168

Table 4.—Acreage and Proportionate Extent of the Soils

Map symbol	Soil name	Acres	Percent
AhbBc	Alden silt loam, 0 to 8 percent slopes, extremely stony-----	2,158	0.6
AhcBc	Alden mucky silt loam, gneiss till substratum, 0 to 8 percent slopes,   extremely stony-----	3,336	1.0
AruCh	Arnot-Lordstown complex, 0 to 15 percent slopes, very rocky-----	3,490	1.0
ArvD	Arnot-Lordstown-Rock outcrop complex, 15 to 35 percent slopes-----	7,440	2.2
ArvE	Arnot-Lordstown-Rock outcrop complex, 35 to 60 percent slopes-----	4,557	1.3
AtcA	Atherton mucky silt loam, 0 to 3 percent slopes-----	46	*
CatbA	Catden mucky peat, 0 to 2 percent slopes-----	9,217	2.7
ChkC	Chatfield-Hollis-Rock outcrop complex, 0 to 15 percent slopes-----	9,342	2.7
ChkE	Chatfield-Hollis-Rock outcrop complex, 35 to 60 percent slopes-----	13,948	4.1
ChwBc	Chippewa silt loam, 0 to 8 percent slopes, extremely stony-----	569	0.2
CorA	Colonie loamy fine sand, 0 to 3 percent slopes-----	47	*
CorB	Colonie loamy fine sand, 3 to 8 percent slopes-----	746	0.2
DefAr	Delaware fine sandy loam, 0 to 3 percent slopes, rarely flooded-----	405	0.1
DefBr	Delaware fine sandy loam, 3 to 8 percent slopes, rarely flooded-----	620	0.2
FaxC	Farmington-Rock outcrop complex, 0 to 15 percent slopes-----	3,917	1.1
FdwB	Farmington-Wassaic-Rock outcrop complex, 0 to 8 percent slopes-----	2,452	0.7
FmhAs	Fluvaquents, loamy, 0 to 3 percent slopes, occasionally flooded-----	1,259	0.4
FrdAb	Fredon-Halsey complex, 0 to 3 percent slopes, very stony-----	10,534	3.1
GawEh	Galway loam, 35 to 60 percent slopes, very rocky-----	542	0.2
HdxAb	Hazen-Hoosic complex, 0 to 3 percent slopes, very stony-----	8,142	2.4
HdxBb	Hazen-Hoosic complex, 3 to 8 percent slopes, very stony-----	22,366	6.5
HhmBc	Hibernia loam, 0 to 8 percent slopes, extremely stony-----	3,136	0.9
HkrgBb	Hinckley loamy coarse sand, 0 to 8 percent slopes, very stony-----	185	*
HkrgCb	Hinckley loamy coarse sand, 8 to 15 percent slopes, very stony-----	629	0.2
HncD	Hollis-Rock outcrop-Chatfield complex, 15 to 35 percent slopes-----	16,424	4.8
HoncB	Hoosic-Hazen complex, 8 to 15 percent slopes, very stony-----	1,578	0.5
HopEb	Hoosic-Otisville complex, 25 to 60 percent slopes, very stony-----	14,967	4.4
LacBc	Lackawanna cobbly fine sandy loam, 0 to 8 percent slopes, extremely stony	39	*
LacCc	Lackawanna cobbly fine sandy loam, 8 to 15 percent slopes, extremely   stony-----	452	0.1
LacDc	Lackawanna cobbly fine sandy loam, 15 to 35 percent slopes, extremely   stony-----	375	0.1
LorB	Lordstown-Wallpack complex, 0 to 8 percent slopes-----	60	*
LorC	Lordstown-Wallpack complex, 8 to 15 percent slopes-----	1,056	0.3
LorCh	Lordstown-Wallpack complex, 8 to 15 percent slopes, very rocky-----	1,602	0.5
LorD	Lordstown-Wallpack complex, 15 to 25 percent slopes-----	956	0.3
LorDh	Lordstown-Wallpack complex, 15 to 35 percent slopes, very rocky-----	2,125	0.6
MabEh	Manlius-Nassau complex, 35 to 60 percent slopes, very rocky-----	801	0.2
NauBh	Nassau-Manlius complex, 0 to 8 percent slopes, very rocky-----	5,919	1.7
NauCh	Nassau-Manlius complex, 8 to 15 percent slopes, very rocky-----	19,375	5.6
NauDh	Nassau-Manlius complex, 15 to 35 percent slopes, very rocky-----	19,085	5.6
NavE	Nassau-Rock outcrop complex, 35 to 60 percent slopes-----	6,171	1.8
OpnCh	Oquaga-Lackawanna complex, 8 to 15 percent slopes, very rocky-----	124	*
OpnDh	Oquaga-Lackawanna complex, 15 to 35 percent slopes, very rocky-----	1,954	0.6
OprC	Oquaga-Rock outcrop complex, 0 to 15 percent slopes-----	498	0.1
OprE	Oquaga-Rock outcrop complex, 35 to 60 percent slopes-----	571	0.2
PHG	Pits, sand and gravel-----	792	0.2
PohA	Pompton sandy loam, 0 to 3 percent slopes-----	560	0.2
QY	Pits, quarry-----	723	0.2
RkrB	Riverhead sandy loam, 3 to 8 percent slopes-----	778	0.2
RnaF	Rock outcrop-Arnot-Rubble land complex, 60 to 80 percent slopes-----	329	*
RnfC	Rock outcrop-Farmington-Galway complex, 8 to 15 percent slopes-----	8,405	2.4
RnfD	Rock outcrop-Farmington-Galway complex, 15 to 35 percent slopes-----	17,122	5.0
RoefBc	Rockaway loam, thin fragipan, 0 to 8 percent slopes, extremely stony----	468	0.1
RoefCc	Rockaway loam, thin fragipan, 8 to 15 percent slopes, extremely stony----	3,884	1.1
RoefDc	Rockaway loam, thin fragipan, 15 to 35 percent slopes, extremely stony----	4,284	1.2
RokB	Rockaway-Chatfield-Rock outcrop complex, 0 to 8 percent slopes-----	1,323	0.4
RokC	Rockaway-Chatfield-Rock outcrop complex, 8 to 15 percent slopes-----	3,186	0.9
RokD	Rockaway-Chatfield-Rock outcrop complex, 15 to 35 percent slopes-----	18,781	5.5
RooB	Rockaway-Urban land complex, thin fragipans, 0 to 8 percent slopes-----	485	0.1
RooC	Rockaway-Urban land complex, thin fragipans, 0 to 15 percent slopes-----	2,013	0.6

See footnote at end of table.

Table 4.-Acreage and Proportionate Extent of the Soils--Continued

Map symbol	Soil name	Acres	Percent
RooD	Rockaway-Urban land complex, thin fragipans, 0 to 25 percent slopes-----	1,358	0.4
ScoA	Scio silt loam, 0 to 3 percent slopes-----	159	*
SwfBc	Swartswood loam, 0 to 8 percent slopes, extremely stony-----	3,598	1.0
SwfCc	Swartswood loam, 8 to 15 percent slopes, extremely stony-----	9,281	2.7
SwfDc	Swartswood loam, 15 to 35 percent slopes, extremely stony-----	10,100	2.9
UccAs	Udifluvents, 0 to 3 percent slopes, occasionally flooded-----	621	0.2
UdaB	Udorthents, 0 to 8 percent slopes, smoothed-----	1,666	0.5
UdaB	Udorthents-Urban land complex, 0 to 8 percent slopes-----	1,727	0.5
UnfA	Unadilla silt loam, 0 to 3 percent slopes-----	78	*
UnfB	Unadilla silt loam, 3 to 8 percent slopes-----	370	0.1
USCHRB	Urban land-Chatfield-Rock outcrop complex, 0 to 8 percent slopes-----	106	*
USCHRC	Urban land-Chatfield-Rock outcrop complex, 0 to 15 percent slopes-----	915	0.3
USCHRD	Urban land-Chatfield-Rock outcrop complex, 0 to 35 percent slopes-----	1,921	0.6
USFARC	Urban land-Farmington-Rock outcrop complex, 0 to 15 percent slopes-----	1,100	0.3
USFARD	Urban land-Farmington-Rock outcrop complex, 0 to 35 percent slopes-----	243	*
USFAWB	Urban land-Farmington-Wassaic complex, 0 to 8 percent slopes-----	151	*
USHAZA	Urban land-Hazen-Hoosic complex, 0 to 3 percent slopes-----	70	*
USHAZB	Urban land-Hazen-Hoosic complex, 0 to 8 percent slopes-----	525	0.2
USNAME	Urban land-Nassau-Manlius complex, 0 to 8 percent slopes-----	266	*
USNAMC	Urban land-Nassau-Manlius complex, 0 to 15 percent slopes-----	523	0.2
USNAMD	Urban land-Nassau-Manlius complex, 0 to 25 percent slopes-----	218	*
USWUSB	Urban land-Wurtsboro-Swartswood complex, 0 to 8 percent slopes-----	66	*
VepBc	Venango silt loam, 0 to 8 percent slopes, extremely stony-----	2,286	0.7
VepCc	Venango silt loam, 8 to 15 percent slopes, extremely stony-----	2,070	0.6
WaahAt	Wallkill silt loam, 0 to 3 percent slopes, frequently flooded-----	1,164	0.3
WabBb	Wallpack fine sandy loam, aeolian mantle, 0 to 8 percent slopes, very stony-----	68	*
WabCb	Wallpack fine sandy loam, aeolian mantle, 8 to 15 percent slopes, very stony-----	780	0.2
WabDb	Wallpack fine sandy loam, aeolian mantle, 15 to 35 percent slopes, very stony-----	1,036	0.3
WacB	Wallpack silt loam, 3 to 8 percent slopes-----	102	*
WacBc	Wallpack silt loam, 3 to 8 percent slopes, extremely stony-----	355	0.1
WacC	Wallpack silt loam, 8 to 15 percent slopes-----	1,334	0.4
WacCc	Wallpack silt loam, 8 to 15 percent slopes, extremely stony-----	681	0.2
WacD	Wallpack silt loam, 15 to 25 percent slopes-----	689	0.2
WacDc	Wallpack silt loam, 15 to 35 percent slopes, extremely stony-----	815	0.2
WATER	Water-----	10,416	3.0
WecBc	Wellsboro silt loam, 0 to 8 percent slopes, extremely stony-----	74	*
WecCc	Wellsboro silt loam, 8 to 15 percent slopes, extremely stony-----	247	*
WumBc	Wurtsboro loam, 0 to 8 percent slopes, extremely stony-----	686	0.2
WusBc	Wurtsboro-Swartswood complex, 0 to 8 percent slopes, extremely stony-----	7,843	2.3
WusCc	Wurtsboro-Swartswood complex, 8 to 15 percent slopes, extremely stony-----	8,072	2.3
WusDc	Wurtsboro-Swartswood complex, 15 to 35 percent slopes, extremely stony-----	3,572	1.0
	Total-----	343,700	100.0

\* Less than 0.1 percent.

Table 5.—Land Capability and Yields per Acre of Crops

(Yields are those that can be expected under a high level of management. They are for nonirrigated areas. Absence of a yield indicates that the soil is not suited to the crop or the crop generally is not grown on the soil.)

Map symbol and soil name	Land capability	Alfalfa hay	Corn	Grass hay	Oats	Wheat
		Tons	Bu	Tons	Bu	Bu
AhbBc: Alden, extremely stony---	7s	---	---	---	---	---
AhcBc: Alden, gneiss till substratum, extremely stony-----	7s	---	---	---	---	---
AruCh: Arnot, very rocky-----	7s	---	---	---	---	---
Lordstown, very rocky---	7s	---	---	---	---	---
ArvD: Arnot-----	7s	---	---	---	---	---
Lordstown-----	7s	---	---	---	---	---
Rock outcrop-----	8s	---	---	---	---	---
ArvE: Arnot-----	7s	---	---	---	---	---
Lordstown-----	7s	---	---	---	---	---
Rock outcrop-----	8s	---	---	---	---	---
AtcA: Atherton, very poorly drained-----	4w	---	---	---	---	---
Atherton, poorly drained	4w	---	---	---	---	---
CatbA: Catden-----	5w	---	---	---	---	---
ChkC: Chatfield-----	7s	---	---	---	---	---
Hollis-----	7s	---	---	---	---	---
Rock outcrop-----	8s	---	---	---	---	---
ChkE: Chatfield-----	7s	---	---	---	---	---
Hollis-----	7s	---	---	---	---	---
Rock outcrop-----	8s	---	---	---	---	---
ChwBc: Chippewa, extremely stony-----	7s	---	---	---	---	---
CorA: Colonie-----	2s	4.50	90.00	---	60.00	---
CorB: Colonie-----	2s	4.50	90.00	---	60.00	---

Table 5.—Land Capability and Yields per Acre of Crops—Continued

Map symbol and soil name	Land capability	Alfalfa hay	Corn	Grass hay	Oats	Wheat
		Tons	Bu	Tons	Bu	Bu
DefAr: Delaware, rarely flooded	1	6.50	135.00	---	80.00	50.00
DefBr: Delaware, rarely flooded	2e	6.50	135.00	---	80.00	50.00
FaxC: Farmington-----	7s	---	---	---	---	---
Rock outcrop-----	8s	---	---	---	---	---
FdwB: Farmington-----	6s	---	---	---	---	---
Wassaic-----	6s	---	---	---	75.00	---
Rock outcrop-----	8s	---	---	---	---	---
FmhAs: Fluvaquents, occasionally flooded---	3w	---	---	---	---	---
FrdAb: Fredon, very stony-----	3w	---	---	---	---	---
Halsey, very stony-----	5w	---	---	---	---	---
GawEh: Galway, very rocky-----	7s	---	---	---	---	---
HdxAb: Hazen, very stony-----	1	4.50	120.00	---	80.00	---
Hoosic, very stony-----	2s	4.50	100.00	4.50	---	---
HdxBb: Hazen, very stony-----	2e	4.50	120.00	---	80.00	---
Hoosic, very stony-----	2s	4.50	100.00	4.50	---	---
HhmBc: Hibernia, extremely stony-----	7s	---	---	---	---	---
HkrgBb: Hinckley, very stony----	3s	2.50	---	---	---	---
HkrgCb: Hinckley, very stony----	4e	---	---	---	---	---
HncD: Hollis-----	7s	---	---	---	---	---
Rock outcrop-----	8s	---	---	---	---	---
Chatfield-----	7s	---	---	---	---	---
HonCb: Hoosic, very stony-----	3e	4.50	80.00	4.50	---	---
Hazen, very stony-----	3e	4.50	120.00	---	80.00	---
HopEb: Hoosic, very stony-----	7e	---	---	---	---	---
Otisville, very stony---	7e	---	---	---	---	---

Table 5.—Land Capability and Yields per Acre of Crops—Continued

Map symbol and soil name	Land capability	Alfalfa hay	Corn	Grass hay	Oats	Wheat
		Tons	Bu	Tons	Bu	Bu
LacBc: Lackawanna, extremely stony-----	7s	---	---	---	---	---
LacCc: Lackawanna, extremely stony-----	7s	---	---	---	---	---
LacDc: Lackawanna, extremely stony-----	7s	---	---	---	---	---
LorB: Lordstown-----	2e	3.50	85.00	---	75.00	---
Wallpack-----	2e	---	105.00	---	---	---
LorC: Lordstown-----	3e	3.50	85.00	---	70.00	---
Wallpack-----	3e	---	105.00	---	---	---
LorCh: Lordstown, very rocky---	6s	---	---	---	---	---
Wallpack, very rocky---	6s	---	---	---	---	---
LorD: Lordstown-----	4e	3.00	---	---	---	---
Wallpack-----	4e	---	---	---	---	---
LorDh: Lordstown, very rocky---	7s	---	---	---	---	---
Wallpack, very rocky---	7s	---	---	---	---	---
MabEh: Manlius, very rocky----	7s	---	---	---	---	---
Nassau, very rocky----	7s	---	---	---	---	---
NauBh: Nassau, very rocky----	6s	---	50.00	---	60.00	---
Manlius, very rocky----	6s	---	80.00	---	70.00	40.00
NauCh: Nassau, very rocky----	6s	---	50.00	---	55.00	---
Manlius, very rocky----	6s	---	75.00	---	65.00	35.00
NauDh: Nassau, very rocky----	7s	---	---	---	---	---
Manlius, very rocky----	7s	---	---	---	---	---
NavE: Nassau-----	7s	---	---	---	---	---
Rock outcrop-----	8s	---	---	---	---	---



Table 5.—Land Capability and Yields per Acre of Crops—Continued

Map symbol and soil name	Land capability	Alfalfa hay	Corn	Grass hay	Oats	Wheat
		Tons	Bu	Tons	Bu	Bu
OpnCh:						
Oquaga, very rocky-----	6s	---	---	---	---	---
Lackawanna, very rocky--	6s	---	---	---	---	---
OpnDh:						
Oquaga, very rocky-----	7s	---	---	---	---	---
Lackawanna, very rocky--	7s	---	---	---	---	---
OprC:						
Oquaga-----	6s	---	---	---	---	---
Rock outcrop-----	8s	---	---	---	---	---
OprE:						
Oquaga-----	7s	---	---	---	---	---
Rock outcrop-----	8s	---	---	---	---	---
PHG:						
Pits, sand and gravel---	---	---	---	---	---	---
PohA:						
Pompton-----	2w	4.00	110.00	---	---	---
QY:						
Pits, quarry-----	---	---	---	---	---	---
RkrB:						
Riverhead-----	2e	---	95.00	---	70.00	60.00
RnaF:						
Rock outcrop-----	8s	---	---	---	---	---
Arnot-----	7s	---	---	---	---	---
Rubble land-----	8s	---	---	---	---	---
RnfC:						
Rock outcrop-----	8s	---	---	---	---	---
Farmington-----	6s	---	---	---	---	---
Galway-----	6s	---	---	---	---	---
RnFD:						
Rock outcrop-----	8s	---	---	---	---	---
Farmington-----	7s	---	---	---	---	---
Galway-----	7s	---	---	---	---	---
RoefBc:						
Rockaway, thin fragipan, extremely stony-----	7s	---	---	---	---	---
RoefCc:						
Rockaway, thin fragipan, extremely stony-----	7s	---	---	---	---	---
RoefDc:						
Rockaway, thin fragipan, extremely stony-----	7s	---	---	---	---	---

Table 5.—Land Capability and Yields per Acre of Crops—Continued

Map symbol and soil name	Land capability	Alfalfa hay	Corn	Grass hay	Oats	Wheat
		Tons	Bu	Tons	Bu	Bu
RokB:						
Rockaway, thin fragipan-	6s	---	---	---	---	---
Chatfield-----	6s	---	---	---	---	---
Rock outcrop-----	8s	---	---	---	---	---
RokC:						
Rockaway, thin fragipan-	6s	---	---	---	---	---
Chatfield-----	6s	---	---	---	---	---
Rock outcrop-----	8s	---	---	---	---	---
RokD:						
Rockaway, thin fragipan-	7s	---	---	---	---	---
Chatfield-----	7s	---	---	---	---	---
Rock outcrop-----	8s	---	---	---	---	---
RooB:						
Rockaway, thin fragipan-	2e	---	---	---	---	---
Urban land, Rockaway substratum-----	8s	---	---	---	---	---
RooC:						
Rockaway, thin fragipan-	3e	---	---	---	---	---
Urban land, Rockaway substratum-----	8s	---	---	---	---	---
RooD:						
Rockaway, thin fragipan-	4e	---	---	---	---	---
Urban land, Rockaway substratum-----	8s	---	---	---	---	---
ScoA:						
Scio-----	2w	4.50	110.00	---	85.00	45.00
SwfBc:						
Swartswood, extremely stony-----	7s	---	---	---	---	---
SwfCc:						
Swartswood, extremely stony-----	7s	---	---	---	---	---
SwfDc:						
Swartswood, extremely stony-----	7s	---	---	---	---	---
UccAs:						
Udifluvents, occasionally flooded---	2w	---	---	---	---	---
UdaB:						
Udorthents-----	2e	---	---	---	---	---
UdauB:						
Udorthents-----	7s	---	---	---	---	---
Urban land-----	8s	---	---	---	---	---

Table 5.—Land Capability and Yields per Acre of Crops—Continued

Map symbol and soil name	Land capability	Alfalfa hay	Corn	Grass hay	Oats	Wheat
		Tons	Bu	Tons	Bu	Bu
UnfA: Unadilla-----	1	6.00	120.00	---	75.00	45.00
UnfB: Unadilla-----	2e	6.00	120.00	---	75.00	45.00
USCHRB: Urban land, Chatfield substratum-----	8s	---	---	---	---	---
Chatfield-----	6s	---	---	---	---	---
Rock outcrop-----	8s	---	---	---	---	---
USCHRC: Urban land, Chatfield substratum-----	8s	---	---	---	---	---
Chatfield-----	6s	---	---	---	---	---
Rock outcrop-----	8s	---	---	---	---	---
USCHRD: Urban land, Chatfield substratum-----	8s	---	---	---	---	---
Chatfield-----	7s	---	---	---	---	---
Rock outcrop-----	8s	---	---	---	---	---
USFARC: Urban land, Farmington substratum-----	8s	---	---	---	---	---
Farmington-----	6s	---	---	---	---	---
Rock outcrop-----	8s	---	---	---	---	---
USFARD: Urban land, Farmington substratum-----	8s	---	---	---	---	---
Farmington-----	7s	---	---	---	---	---
Rock outcrop-----	8s	---	---	---	---	---
USFAWB: Urban land, Farmington substratum-----	8s	---	---	---	---	---
Farmington-----	3s	---	---	---	---	---
Wassaic-----	2e	---	---	---	---	---
USHAZA: Urban land, Hazen substratum-----	8s	---	---	---	---	---
Hazen-----	1	---	---	---	---	---
Hoosic-----	2s	---	---	---	---	---

Table 5.—Land Capability and Yields per Acre of Crops—Continued

Map symbol and soil name	Land capability	Alfalfa hay	Corn	Grass hay	Oats	Wheat
		Tons	Bu	Tons	Bu	Bu
USHAZB:						
Urban land, Hazen substratum-----	8s	---	---	---	---	---
Hazen-----	2e	---	---	---	---	---
Hoosic-----	2s	---	---	---	---	---
USNAMB:						
Urban land, Nassau substratum-----	8s	---	---	---	---	---
Nassau-----	3s	---	---	---	---	---
Manlius-----	2s	---	---	---	---	---
USNAMC:						
Urban land, Nassau substratum-----	8s	---	---	---	---	---
Nassau-----	4e	---	---	---	---	---
Manlius-----	3e	---	---	---	---	---
USNAMD:						
Urban land, Nassau substratum-----	8s	---	---	---	---	---
Nassau-----	6e	---	---	---	---	---
Manlius-----	4e	---	---	---	---	---
USWUSB:						
Urban land, Wurtsboro substratum-----	8s	---	---	---	---	---
Wurtsboro-----	2w	---	---	---	---	---
Swartswood-----	2e	---	---	---	---	---
VepBc:						
Venango, extremely stony	7s	---	---	---	---	---
VepCc:						
Venango, extremely stony	7s	---	---	---	---	---
WaahAt:						
Wallkill, frequently flooded-----	5w	---	---	---	---	---
WabBb:						
Wallpack, aeolian mantle, very stony----	2e	---	105.00	---	---	---
WabCb:						
Wallpack, aeolian mantle, very stony----	3e	---	105.00	---	---	---
WabDb:						
Wallpack, aeolian mantle, very stony----	6e	---	---	---	---	---
WacB:						
Wallpack-----	2e	---	105.00	---	---	---

Table 5.—Land Capability and Yields per Acre of Crops—Continued

Map symbol and soil name	Land capability	Alfalfa hay	Corn	Grass hay	Oats	Wheat
		Tons	Bu	Tons	Bu	Bu
WacBc: Wallpack, extremely stony-----	7s	---	---	---	---	---
WacC: Wallpack-----	3e	---	105.00	---	---	---
WacCc: Wallpack, extremely stony-----	7s	---	---	---	---	---
WacD: Wallpack-----	4e	---	---	---	---	---
WacDc: Wallpack, extremely stony-----	7s	---	---	---	---	---
WATER: Water-----	---	---	---	---	---	---
WecBc: Wellsboro, extremely stony-----	7s	---	---	---	---	---
WecCc: Wellsboro, extremely stony-----	7s	---	---	---	---	---
WumBc: Wurtsboro, extremely stony-----	7s	---	---	---	---	---
WusBc: Wurtsboro, extremely stony-----	7s	---	---	---	---	---
Swartswood, extremely stony-----	7s	---	---	---	---	---
WusCc: Wurtsboro, extremely stony-----	7s	---	---	---	---	---
Swartswood, extremely stony-----	7s	---	---	---	---	---
WusDc: Wurtsboro, extremely stony-----	7s	---	---	---	---	---
Swartswood, extremely stony-----	7s	---	---	---	---	---

Table 6.—Acreage by Capability Class and Subclass

Capability class	Capability subclass	Acreage
Unclassified	---	11,931
1	---	4,559
2	e	17,496
2	w	3,806
2	s	12,030
3	e	6,076
3	w	5,956
3	s	1,478
4	e	3,237
4	w	97
5	w	14,595
6	e	1,090
6	s	37,473
7	e	14,967
7	s	165,525
8	s	43,384

Table 7.—Prime and other Important Farmland

(Only the soils considered prime or important farmland are listed. Urban or built-up areas of the soils listed are not considered prime or important farmland.)

Map Symbol	Map unit name
Prime Farmland:	
DefAr-----	Delaware fine sandy loam, 0 to 3 percent slopes, rarely flooded
DefBr-----	Delaware fine sandy loam, 3 to 8 percent slopes, rarely flooded
HdxAb-----	Hazen-Hoosic complex, 0 to 3 percent slopes, very stony
HdxBb-----	Hazen-Hoosic complex, 3 to 8 percent slopes, very stony
LorB-----	Lordstown-Wallpack complex, 0 to 8 percent slopes
PohA-----	Pompton sandy loam, 0 to 3 percent slopes
RkrB-----	Riverhead sandy loam, 3 to 8 percent slopes
ScoA-----	Scio silt loam, 0 to 3 percent slopes
UnfA-----	Unadilla silt loam, 0 to 3 percent slopes
WabBb-----	Wallpack fine sandy loam, aeolian mantle, 0 to 8 percent slopes, very stony
WacB-----	Wallpack silt loam, 3 to 8 percent slopes
Farmland of Unique Importance:	
CatbA-----	Catden mucky peat, 0 to 2 percent slopes
Farmland of Statewide Importance:	
CorA-----	Colonie loamy fine sand, 0 to 3 percent slopes
CorB-----	Colonie loamy fine sand, 3 to 8 percent slopes
HonCb-----	Hoosic-Hazen complex, 8 to 15 percent slopes, very stony
LorC-----	Lordstown-Wallpack complex, 8 to 15 percent slopes
UnfB-----	Unadilla silt loam, 3 to 8 percent slopes
WabCb-----	Wallpack fine sandy loam, aeolian mantle, 8 to 15 percent slopes, very stony
WacC-----	Wallpack silt loam, 8 to 15 percent slopes

Table 8.—Forestland Productivity

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber cu ft/ac	
AhbBc: Alden, extremely stony---	red maple-----	50	29	eastern white cedar, white spruce
AhcBc: Alden, gneiss till substratum, extremely stony-----	red maple-----	50	29	eastern white cedar, white spruce
AruCh: Arnot, very rocky-----	eastern white pine-- northern red oak---- sugar maple----- white ash-----	55 55 50 55	86 43 29 29	eastern white pine, European larch, red pine
Lordstown, very rocky---	northern red oak---- sugar maple----- white ash-----	60 70 75	43 43 43	eastern white pine, European larch, Norway spruce, red pine
ArvD: Arnot-----	eastern white pine-- northern red oak---- sugar maple----- white ash-----	55 55 50 55	86 43 29 29	eastern white pine, European larch, red pine
Lordstown-----	northern red oak---- sugar maple----- white ash-----	60 70 75	43 43 43	eastern white pine, European larch, Norway spruce, red pine
Rock outcrop-----	---	---	---	---
ArvE: Arnot-----	eastern white pine-- northern red oak---- sugar maple----- white ash-----	55 55 50 55	86 43 29 29	eastern white pine, European larch, red pine
Lordstown-----	northern red oak---- sugar maple----- white ash-----	70 73 75	57 43 43	eastern white pine, European larch, Norway spruce, red pine
Rock outcrop-----	---	---	---	---
AtcA: Atherton, very poorly drained-----	eastern white pine-- red maple-----	62 60	114 43	eastern white cedar, white spruce
Atherton, poorly drained	eastern white pine-- red maple-----	62 60	114 43	eastern white cedar, white spruce
CatbA: Catden-----	red maple----- silver maple-----	56 82	29 29	eastern white cedar, white spruce



Table 8.—Forestland Productivity—Continued

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber cu ft/ac	
ChkC:				
Chatfield-----	northern red oak----	70	57	eastern white pine,
	sugar maple-----	65	43	European larch,
	white ash-----	75	43	Norway spruce, red pine
Hollis-----	eastern white pine--	55	86	eastern white pine
	northern red oak----	47	29	
	sugar maple-----	56	29	
Rock outcrop-----	---	---	---	---
ChkE:				
Chatfield-----	northern red oak----	70	57	eastern white pine,
	sugar maple-----	65	43	European larch,
	white ash-----	75	43	Norway spruce, red pine
Hollis-----	eastern white pine--	55	86	eastern white pine
	northern red oak----	47	29	
	sugar maple-----	56	29	
Rock outcrop-----	---	---	---	---
ChwBc:				
Chippewa, extremely stony-----	red maple-----	50	29	eastern white cedar, white spruce
CorA:				
Colonie-----	black oak-----	60	43	eastern white pine,
	northern red oak----	60	43	European larch,
	red pine-----	65	114	red pine
	sugar maple-----	55	29	
	white oak-----	60	43	
CorB:				
Colonie-----	black oak-----	60	43	eastern white pine,
	northern red oak----	60	43	European larch,
	red pine-----	65	114	red pine
	sugar maple-----	55	29	
	white oak-----	60	43	
DefAr:				
Delaware, rarely flooded	northern red oak----	75	57	black walnut,
	sugar maple-----	67	43	eastern white
	tuliptree-----	85	86	pine, European larch, Norway spruce, tuliptree
DefBr:				
Delaware, rarely flooded	northern red oak----	75	57	black walnut,
	sugar maple-----	67	43	eastern white
	tuliptree-----	85	86	pine, European larch, Norway spruce, tuliptree

Table 8.—Forestland Productivity—Continued

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber  cu ft/ac	
<b>FaxC:</b>				
Farmington-----	eastern hemlock-----	50	0	eastern white pine,
	eastern white pine--	55	86	European larch,
	northern red oak----	50	29	red pine
	sugar maple-----	50	29	
	white ash-----	55	29	
Rock outcrop-----	---	---	---	---
<b>FdwB:</b>				
Farmington-----	eastern hemlock-----	50	0	eastern white pine,
	eastern white pine--	55	86	European larch,
	northern red oak----	50	29	red pine
	sugar maple-----	50	29	
	white ash-----	55	29	
Wassaic-----	northern red oak----	80	57	eastern white pine,
	sugar maple-----	73	43	European larch,
	white ash-----	85	57	Norway spruce, red pine
Rock outcrop-----	---	---	---	---
<b>FmhAs:</b>				
Fluvaquents, occasionally flooded--	---	---	---	---
<b>FrdAb:</b>				
Fredon, very stony-----	eastern white pine--	70	129	eastern white pine,
	northern red oak----	60	43	Norway spruce,
	red maple-----	70	43	tuliptree, white spruce
	tuliptree-----	80	72	
Halsey, very stony-----	red maple-----	55	29	eastern white pine, white spruce
<b>GawEh:</b>				
Galway, very rocky-----	northern red oak----	70	57	eastern white pine,
	sugar maple-----	65	43	European larch,
	white ash-----	75	43	Norway spruce, red pine
<b>HdxAb:</b>				
Hazen, very stony-----	black oak-----	80	57	Austrian pine,
	northern red oak----	80	57	eastern white
	tuliptree-----	80	72	pine, European
	white ash-----	85	57	larch, Norway
	white oak-----	80	57	spruce
Hoosic, very stony-----	northern red oak----	75	57	eastern white pine,
	sugar maple-----	65	43	European larch, red pine
<b>HdxBb:</b>				
Hazen, very stony-----	black oak-----	80	57	Austrian pine,
	northern red oak----	80	57	eastern white
	tuliptree-----	80	72	pine, European
	white ash-----	85	57	larch, Norway
	white oak-----	80	57	spruce

Table 8.—Forestland Productivity—Continued

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber cu ft/ac	
HdxBb: (cont.)				
Hoosic, very stony-----	northern red oak----	75	57	eastern white pine,
	sugar maple-----	65	43	European larch, red pine
HhmBc:				
Hibernia, extremely stony-----	pin oak-----	80	57	eastern white pine,
	tuliptree-----	90	86	larch
	white oak-----	80	57	
HkrgBb:				
Hinckley, very stony----	eastern white pine--	60	100	eastern white pine,
	northern red oak----	49	29	European larch
	red pine-----	58	100	
	sugar maple-----	57	29	
HkrgCb:				
Hinckley, very stony----	eastern white pine--	60	100	eastern white pine,
	northern red oak----	49	29	European larch
	red pine-----	58	100	
	sugar maple-----	57	29	
HncD:				
Hollis-----	eastern white pine--	55	86	eastern white pine
	northern red oak----	47	29	
	sugar maple-----	56	29	
Rock outcrop-----	---	---	---	---
Chatfield-----	northern red oak----	70	57	eastern white pine,
	sugar maple-----	65	43	European larch,
	white ash-----	75	43	Norway spruce, red pine
HonCb:				
Hoosic, very stony-----	northern red oak----	75	57	eastern white pine,
	sugar maple-----	65	43	European larch, red pine
Hazen, very stony-----	black oak-----	80	57	Austrian pine,
	northern red oak----	80	57	eastern white
	tuliptree-----	80	72	pine, European
	white ash-----	85	57	larch, Norway
	white oak-----	80	57	spruce
HopEb:				
Hoosic, very stony-----	northern red oak----	75	57	eastern white pine,
	sugar maple-----	65	43	European larch, red pine
Otisville, very stony---	black oak-----	60	43	eastern white pine,
	eastern white pine--	65	114	European larch,
	northern red oak----	60	43	red pine
	sugar maple-----	55	29	
	white oak-----	60	43	
LacBc:				
Lackawanna, extremely stony-----	black cherry-----	75	43	eastern white pine,
	northern red oak----	70	57	European larch,
	sugar maple-----	70	43	Norway spruce, red pine
	white ash-----	70	43	

Table 8.—Forestland Productivity—Continued

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber cu ft/ac	
LacCc: Lackawanna, extremely stony-----	black cherry----- northern red oak---- sugar maple----- white ash-----	75 70 70 70	43 57 43 43	eastern white pine, European larch, Norway spruce, red pine
LacDc: Lackawanna, extremely stony-----	black cherry----- northern red oak---- sugar maple----- white ash-----	75 70 70 70	43 57 43 43	eastern white pine, European larch, Norway spruce, red pine
LorB: Lordstown-----	northern red oak---- sugar maple----- white ash-----	60 70 75	43 43 43	eastern white pine, European larch, Norway spruce, red pine
Wallpack-----	northern red oak---- sugar maple----- tuliptree-----	86 85 96	72 57 100	black oak, eastern white pine, red pine, tuliptree, Virginia pine, white ash
LorC: Lordstown-----	northern red oak---- sugar maple----- white ash-----	60 70 75	43 43 43	eastern white pine, European larch, Norway spruce, red pine
Wallpack-----	northern red oak---- sugar maple----- tuliptree-----	86 85 96	72 57 100	black oak, eastern white pine, red pine, tuliptree, Virginia pine, white ash
LorCh: Lordstown, very rocky---	northern red oak---- sugar maple----- white ash-----	60 70 75	43 43 43	eastern white pine, European larch, Norway spruce, red pine
Wallpack, very rocky---	northern red oak---- sugar maple----- tuliptree-----	86 85 96	72 57 100	black oak, eastern white pine, red pine, tuliptree, Virginia pine, white ash
LorD: Lordstown-----	northern red oak---- sugar maple----- white ash-----	60 70 75	43 43 43	eastern white pine, European larch, Norway spruce, red pine
Wallpack-----	northern red oak---- sugar maple----- tuliptree-----	86 85 96	72 57 100	black oak, eastern white pine, red pine, tuliptree, Virginia pine, white ash

Table 8.—Forestland Productivity—Continued

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber cu ft/ac	
LorDh:				
Lordstown, very rocky---	northern red oak----	60	43	eastern white pine,
	sugar maple-----	70	43	European larch,
	white ash-----	75	43	Norway spruce, red pine
Wallpack, very rocky---	northern red oak----	86	72	black oak, eastern
	sugar maple-----	85	57	white pine, red
	tuliptree-----	96	100	pine, tuliptree, Virginia pine, white ash
MabEh:				
Manlius, very rocky----	black cherry-----	70	43	black cherry,
	northern red oak----	70	57	eastern white
	sugar maple-----	70	43	pine, European larch, Norway spruce, red pine
Nassau, very rocky-----	eastern white pine--	55	86	eastern white pine,
	northern red oak----	50	29	European larch,
	sugar maple-----	50	29	red pine
NauBh:				
Nassau, very rocky-----	eastern white pine--	55	86	eastern white pine,
	northern red oak----	50	29	European larch,
	sugar maple-----	50	29	red pine
Manlius, very rocky----	black cherry-----	70	43	black cherry,
	northern red oak----	70	57	eastern white
	sugar maple-----	70	43	pine, European larch, Norway spruce, red pine
NauCh:				
Nassau, very rocky-----	eastern white pine--	55	86	eastern white pine,
	northern red oak----	50	29	European larch,
	sugar maple-----	50	29	red pine
Manlius, very rocky----	black cherry-----	70	43	black cherry,
	northern red oak----	70	57	eastern white
	sugar maple-----	70	43	pine, European larch, Norway spruce, red pine
NauDh:				
Nassau, very rocky-----	eastern white pine--	55	86	eastern white pine,
	northern red oak----	50	29	European larch,
	sugar maple-----	50	29	red pine
Manlius, very rocky----	black cherry-----	70	43	black cherry,
	northern red oak----	70	57	eastern white
	sugar maple-----	70	43	pine, European larch, Norway spruce, red pine
NavE:				
Nassau-----	eastern white pine--	55	86	eastern white pine,
	northern red oak----	50	29	European larch,
	sugar maple-----	50	29	red pine
Rock outcrop-----	---	---	---	---

Table 8.—Forestland Productivity—Continued

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber cu ft/ac	
OpnCh:				
Oquaga, very rocky-----	northern red oak----	60	43	eastern white pine,
	sugar maple-----	73	43	European larch,
	white ash-----	75	43	Norway spruce, red pine
Lackawanna, very rocky--	black cherry-----	75	43	eastern white pine,
	northern red oak----	70	57	European larch,
	sugar maple-----	70	43	Norway spruce, red pine
	white ash-----	70	43	
OpnDh:				
Oquaga, very rocky-----	northern red oak----	60	43	eastern white pine,
	sugar maple-----	73	43	European larch,
	white ash-----	75	43	Norway spruce, red pine
Lackawanna, very rocky--	black cherry-----	75	43	eastern white pine,
	northern red oak----	70	57	European larch,
	sugar maple-----	70	43	Norway spruce, red pine
	white ash-----	70	43	
OprC:				
Oquaga-----	northern red oak----	60	43	eastern white pine,
	sugar maple-----	73	43	European larch,
	white ash-----	75	43	Norway spruce, red pine
Rock outcrop-----	---	---	---	---
OprE:				
Oquaga-----	northern red oak----	60	43	eastern white pine,
	sugar maple-----	73	43	European larch,
	white ash-----	75	43	Norway spruce, red pine
Rock outcrop-----	---	---	---	---
PHG:				
Pits, sand and gravel---	---	---	---	---
PohA:				
Pompton-----	swamp white oak----	70	43	eastern white pine,
	tuliptree-----	75	57	European larch,
	white ash-----	80	43	northern red oak, tuliptree, white ash
QY:				
Pits, quarry-----	---	---	---	---
RkrB:				
Riverhead-----	black cherry-----	70	43	eastern white pine,
	eastern white pine--	75	143	European larch,
	northern red oak----	70	57	Norway spruce
	sugar maple-----	63	43	

Table 8.—Forestland Productivity—Continued

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber cu ft/ac	
RnaF: Rock outcrop-----	---	---	---	---
Arnot-----	eastern white pine-- northern red oak---- sugar maple----- white ash-----	55 55 50 55	86 43 29 29	eastern white pine, European larch, red pine
Rubble land-----	---	---	---	---
RnfC: Rock outcrop-----	---	---	---	---
Farmington-----	eastern hemlock----- eastern white pine-- northern red oak---- sugar maple----- white ash-----	50 55 50 50 55	0 86 29 29 29	eastern white pine, European larch, red pine
Galway-----	northern red oak---- sugar maple----- white ash-----	70 65 75	57 43 43	eastern white pine, European larch, Norway spruce, red pine
RnfD: Rock outcrop-----	---	---	---	---
Farmington-----	eastern hemlock----- eastern white pine-- northern red oak---- sugar maple----- white ash-----	50 55 50 50 55	0 86 29 29 29	eastern white pine, European larch, red pine
Galway-----	northern red oak---- sugar maple----- white ash-----	70 65 75	57 43 43	eastern white pine, European larch, Norway spruce, red pine
RoefBc: Rockaway, thin fragipan, extremely stony-----	black oak----- northern red oak---- scarlet oak----- tuliptree----- white ash----- white oak-----	70 70 70 75 65 70	57 57 57 57 43 57	Austrian pine, eastern white pine, Norway spruce
RoefCc: Rockaway, thin fragipan, extremely stony-----	black oak----- northern red oak---- scarlet oak----- tuliptree----- white ash----- white oak-----	70 70 70 75 65 70	57 57 57 57 43 57	Austrian pine, eastern white pine, Norway spruce
RoefDc: Rockaway, thin fragipan, extremely stony-----	black oak----- northern red oak---- scarlet oak----- tuliptree----- white ash----- white oak-----	70 70 70 75 65 70	57 57 57 57 43 57	Austrian pine, eastern white pine, Norway spruce

Table 8.—Forestland Productivity—Continued

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber cu ft/ac	
RokB:				
Rockaway, thin fragipan-	black oak-----	70	57	Austrian pine,
	northern red oak----	70	57	eastern white
	scarlet oak-----	70	57	pine, Norway
	tuliptree-----	75	57	spruce
	white ash-----	65	43	
	white oak-----	70	57	
Chatfield-----	northern red oak----	70	57	eastern white pine,
	sugar maple-----	65	43	European larch,
	white ash-----	75	43	Norway spruce, red
				pine
Rock outcrop-----	---	---	---	---
RokC:				
Rockaway, thin fragipan-	black oak-----	70	57	Austrian pine,
	northern red oak----	70	57	eastern white
	scarlet oak-----	70	57	pine, Norway
	tuliptree-----	75	57	spruce
	white ash-----	65	43	
	white oak-----	70	57	
Chatfield-----	northern red oak----	70	57	eastern white pine,
	sugar maple-----	65	43	European larch,
	white ash-----	75	43	Norway spruce, red
				pine
Rock outcrop-----	---	---	---	---
RokD:				
Rockaway, thin fragipan-	black oak-----	70	57	Austrian pine,
	northern red oak----	70	57	eastern white
	scarlet oak-----	70	57	pine, Norway
	tuliptree-----	75	57	spruce
	white ash-----	65	43	
	white oak-----	70	57	
Chatfield-----	northern red oak----	70	57	eastern white pine,
	sugar maple-----	65	43	European larch,
	white ash-----	75	43	Norway spruce, red
				pine
Rock outcrop-----	---	---	---	---
RooB:				
Rockaway, thin fragipan-	black oak-----	70	57	Austrian pine,
	northern red oak----	70	57	eastern white
	scarlet oak-----	70	57	pine, Norway
	tuliptree-----	75	57	spruce
	white ash-----	65	43	
	white oak-----	70	57	
Urban land, Rockaway thin fragipan substratum-----	---	---	---	---



Table 8.—Forestland Productivity—Continued

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber cu ft/ac	
RooC:				
Rockaway, thin fragipan-	black oak-----	70	57	Austrian pine,
	northern red oak----	70	57	eastern white
	scarlet oak-----	70	57	pine, Norway
	tuliptree-----	75	57	spruce
	white ash-----	65	43	
	white oak-----	70	57	
Urban land, Rockaway thin fragipan substratum-----	---	---	---	---
RooD:				
Rockaway, thin fragipan-	black oak-----	70	57	Austrian pine,
	northern red oak----	70	57	eastern white
	scarlet oak-----	70	57	pine, Norway
	tuliptree-----	75	57	spruce
	white ash-----	65	43	
	white oak-----	70	57	
Urban land, Rockaway thin fragipan substratum-----	---	---	---	---
ScoA:				
Scio-----	black cherry-----	80	57	eastern white pine,
	eastern hemlock-----	70	0	European larch,
	eastern white pine--	85	143	Norway spruce, red
	northern red oak----	75	57	pine, white spruce
	sugar maple-----	70	43	
	white ash-----	85	57	
SwfBc:				
Swartswood, extremely stony-----	northern red oak----	70	57	eastern white pine,
	sugar maple-----	70	43	Norway spruce, red
	white ash-----	70	43	pine
SwfCc:				
Swartswood, extremely stony-----	northern red oak----	70	57	eastern white pine,
	sugar maple-----	70	43	Norway spruce, red
	white ash-----	70	43	pine
SwfDc:				
Swartswood, extremely stony-----	northern red oak----	70	57	eastern white pine,
	sugar maple-----	70	43	Norway spruce, red
	white ash-----	70	43	pine
UccAs:				
Udifluvents, occasionally flooded---	---	---	---	---
UdaB:				
Udorthents-----	---	---	---	---
UdauB:				
Udorthents-----	---	---	---	---
Urban land-----	---	---	---	---

Table 8.—Forestland Productivity—Continued

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber cu ft/ac	
UnfA:				
Unadilla-----	black cherry-----	80	57	black cherry,
	eastern white pine--	85	143	eastern white
	northern red oak----	80	57	pine, European
	sugar maple-----	70	43	larch, Norway
	white ash-----	95	72	spruce, red pine, white spruce
UnfB:				
Unadilla-----	black cherry-----	80	57	black cherry,
	eastern white pine--	85	143	eastern white
	northern red oak----	80	57	pine, European
	sugar maple-----	70	43	larch, Norway
	white ash-----	95	72	spruce, red pine, white spruce
USCHRB:				
Urban land, Chatfield substratum-----	---	---	---	---
Chatfield-----	northern red oak----	70	57	eastern white pine,
	sugar maple-----	65	43	European larch,
	white ash-----	75	43	Norway spruce, red pine
Rock outcrop-----	---	---	---	---
USCHRC:				
Urban land, Chatfield substratum-----	---	---	---	---
Chatfield-----	northern red oak----	70	57	eastern white pine,
	sugar maple-----	65	43	European larch,
	white ash-----	75	43	Norway spruce, red pine
Rock outcrop-----	---	---	---	---
USCHRD:				
Urban land, Chatfield substratum-----	---	---	---	---
Chatfield-----	northern red oak----	70	57	eastern white pine,
	sugar maple-----	65	43	European larch,
	white ash-----	75	43	Norway spruce, red pine
Rock outcrop-----	---	---	---	---
USFARC:				
Urban land, Farmington substratum-----	---	---	---	---
Farmington-----	eastern hemlock-----	50	0	eastern white pine,
	eastern white pine--	55	86	European larch,
	northern red oak----	50	29	red pine
	sugar maple-----	50	29	
	white ash-----	55	29	
Rock outcrop-----	---	---	---	---

Table 8.—Forestland Productivity—Continued

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber cu ft/ac	
USFARD: Urban land, Farmington substratum-----	---	---	---	---
Farmington-----	eastern hemlock-----	50	0	eastern white pine,
	eastern white pine--	55	86	European larch,
	northern red oak----	50	29	red pine
	sugar maple-----	50	29	
	white ash-----	55	29	
Rock outcrop-----	---	---	---	---
USFAWB: Urban land, Farmington substratum-----	---	---	---	---
Farmington-----	eastern hemlock-----	50	0	eastern white pine,
	eastern white pine--	55	86	European larch,
	northern red oak----	50	29	red pine
	sugar maple-----	50	29	
	white ash-----	55	29	
Wassaic-----	northern red oak----	80	57	eastern white pine,
	sugar maple-----	73	43	European larch,
	white ash-----	85	57	Norway spruce, red pine
USHAZA: Urban land, Hazen substratum-----	---	---	---	---
Hazen-----	black oak-----	80	57	Austrian pine,
	northern red oak----	80	57	eastern white
	tuliptree-----	80	72	pine, European
	white ash-----	85	57	larch, Norway
	white oak-----	80	57	spruce
Hoosic-----	northern red oak----	75	57	eastern white pine,
	sugar maple-----	65	43	European larch, red pine
USHAZB: Urban land, Hazen substratum-----	---	---	---	---
Hazen-----	black oak-----	80	57	Austrian pine,
	northern red oak----	80	57	eastern white
	tuliptree-----	80	72	pine, European
	white ash-----	85	57	larch, Norway
	white oak-----	80	57	spruce
Hoosic-----	northern red oak----	75	57	eastern white pine,
	sugar maple-----	65	43	European larch, red pine
USNAME: Urban land, Nassau substratum-----	---	---	---	---
Nassau-----	eastern white pine--	55	86	eastern white pine,
	northern red oak----	50	29	European larch,
	sugar maple-----	50	29	red pine

Table 8.—Forestland Productivity—Continued

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber cu ft/ac	
USNAME: (cont.)				
Manlius-----	black cherry-----	70	43	black cherry,
	northern red oak----	70	57	eastern white
	sugar maple-----	70	43	pine, European
				larch, Norway
				spruce, red pine
USNAME:				
Urban land, Nassau				
substratum-----	---	---	---	---
Nassau-----	eastern white pine--	55	86	eastern white pine,
	northern red oak----	50	29	European larch,
	sugar maple-----	50	29	red pine
Manlius-----	black cherry-----	70	43	black cherry,
	northern red oak----	70	57	eastern white
	sugar maple-----	70	43	pine, European
				larch, Norway
				spruce, red pine
USNAME:				
Urban land, Nassau				
substratum-----	---	---	---	---
Nassau-----	eastern white pine--	55	86	eastern white pine,
	northern red oak----	50	29	European larch,
	sugar maple-----	50	29	red pine
Manlius-----	black cherry-----	70	43	black cherry,
	northern red oak----	70	57	eastern white
	sugar maple-----	70	43	pine, European
				larch, Norway
				spruce, red pine
USWUSB:				
Urban land, Wurtsboro				
substratum-----	---	---	---	---
Wurtsboro-----	northern red oak----	70	57	black cherry,
	sugar maple-----	70	43	eastern white
				pine, Norway
				spruce, red pine
Swartswood-----	northern red oak----	70	57	eastern white pine,
	sugar maple-----	70	43	Norway spruce, red
	white ash-----	70	43	pine
VepBc:				
Venango, extremely stony	northern red oak----	83	57	red pine,
	sugar maple-----	79	57	tuliptree,
	white ash-----	75	86	Virginia pine,
				white ash
VepCc:				
Venango, extremely stony	northern red oak----	83	57	black oak, eastern
	sugar maple-----	79	57	white pine, red
	white ash-----	75	86	pine, tuliptree,
				Virginia pine,
				white ash

Table 8.—Forestland Productivity—Continued

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber cu ft/ac	
WaahAt: Wallkill, frequently flooded-----	silver maple-----	70	29	eastern white cedar, white spruce
WabBb: Wallpack, aeolian mantle, very stony-----	northern red oak----- sugar maple----- tuliptree-----	86 85 96	72 57 100	black oak, eastern white pine, red pine, tuliptree, Virginia pine, white ash
WabCb: Wallpack, aeolian mantle, very stony-----	northern red oak----- sugar maple----- tuliptree-----	86 85 96	72 57 100	black oak, eastern white pine, red pine, tuliptree, Virginia pine, white ash
WabDb: Wallpack, aeolian mantle, very stony-----	northern red oak----- sugar maple----- tuliptree-----	86 85 96	72 57 100	black oak, eastern white pine, red pine, tuliptree, Virginia pine, white ash
WacB: Wallpack-----	northern red oak----- sugar maple----- tuliptree-----	86 85 96	72 57 100	black oak, eastern white pine, red pine, tuliptree, Virginia pine, white ash
WacBc: Wallpack, extremely stony-----	northern red oak----- sugar maple----- tuliptree-----	86 85 96	72 57 100	black oak, eastern white pine, red pine, tuliptree, Virginia pine, white ash
WacC: Wallpack-----	northern red oak----- sugar maple----- tuliptree-----	86 85 96	72 57 100	black oak, eastern white pine, red pine, tuliptree, Virginia pine, white ash
WacCc: Wallpack, extremely stony-----	northern red oak----- sugar maple----- tuliptree-----	86 85 96	72 57 100	black oak, eastern white pine, red pine, tuliptree, Virginia pine, white ash

Table 8.—Forestland Productivity—Continued

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber cu ft/ac	
WacD: Wallpack-----	northern red oak----	86	72	black oak, eastern white pine, red pine, tuliptree, Virginia pine, white ash
	sugar maple-----	85	57	
	tuliptree-----	96	100	
WacDc: Wallpack, extremely stony-----	northern red oak----	86	72	black oak, eastern white pine, red pine, tuliptree, Virginia pine, white ash
	sugar maple-----	85	57	
	tuliptree-----	96	100	
WATER: Water-----	---	---	---	---
WecBc: Wellsboro, extremely stony-----	northern red oak----	70	57	black cherry, eastern white pine, Norway spruce, red pine
	sugar maple-----	70	43	
WecCc: Wellsboro, extremely stony-----	northern red oak----	70	57	black cherry, eastern white pine, Norway spruce, red pine
	sugar maple-----	70	43	
WumBc: Wurtsboro, extremely stony-----	northern red oak----	70	57	black cherry, eastern white pine, Norway spruce, red pine
	sugar maple-----	70	43	
WusBc: Wurtsboro, extremely stony-----	northern red oak----	70	57	black cherry, eastern white pine, Norway spruce, red pine
	sugar maple-----	70	43	
Swartswood, extremely stony-----	northern red oak----	70	57	eastern white pine, Norway spruce, red pine
	sugar maple-----	70	43	
	white ash-----	70	43	
WusCc: Wurtsboro, extremely stony-----	northern red oak----	70	57	black cherry, eastern white pine, Norway spruce, red pine
	sugar maple-----	70	43	
Swartswood, extremely stony-----	northern red oak----	70	57	eastern white pine, Norway spruce, red pine
	sugar maple-----	70	43	
	white ash-----	70	43	

Table 8.—Forestland Productivity—Continued

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber cu ft/ac	
WusDc: Wurtsboro, extremely stony-----	northern red oak----	70	57	black cherry,
	sugar maple-----	70	43	eastern white pine, Norway spruce, red pine
Swartswood, extremely stony-----	northern red oak----	70	57	eastern white pine,
	sugar maple-----	70	43	Norway spruce, red pine
	white ash-----	70	43	

Table 9.—Haul Roads, Log Landings, and Soil Rutting on Forestland

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct. of map unit	Limitations affecting construction of haul roads and log landings		Suitability for log landings		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
AhbBc: Alden, extremely stony-----	90	Moderate Stoniness Low strength	 0.50 0.50	Poorly suited Ponding Stoniness Low strength	 1.00 0.50 0.50	Severe Low strength	 1.00
AhcBc: Alden, gneiss till substratum, extremely stony----	90	Severe Low strength Stoniness Stickiness/slope	 1.00 0.50 0.50	Poorly suited Ponding Low strength Stoniness Stickiness; high plasticity index	 1.00 1.00 0.50 0.50	Severe Low strength	 1.00
AruCh: Arnot, very rocky---	55	Severe Stoniness Depth to bedrock	 1.00 1.00	Poorly suited Stoniness Slope	 1.00 0.50	Severe Low strength	 1.00
Lordstown, very rocky-----	40	Severe Stoniness Depth to bedrock	 1.00 0.50	Poorly suited Stoniness Slope	 1.00 0.50	Severe Low strength	 1.00
ArvD: Arnot-----	45	Severe Stoniness Depth to bedrock Slope	 1.00 1.00 0.50	Poorly suited Slope Stoniness	 1.00 1.00	Severe Low strength	 1.00
Lordstown-----	40	Severe Stoniness Slope Depth to bedrock	 1.00 0.50 0.50	Poorly suited Slope Stoniness	 1.00 1.00	Severe Low strength	 1.00
Rock outcrop-----	15	Not rated		Not rated		Not rated	
ArvE: Arnot-----	60	Severe Slope Stoniness	 1.00 1.00	Poorly suited Slope Stoniness	 1.00 1.00	Severe Low strength	 1.00
Lordstown-----	25	Severe Slope Stoniness	 1.00 1.00	Poorly suited Slope Stoniness	 1.00 1.00	Severe Low strength	 1.00
Rock outcrop-----	15	Not rated		Not rated		Not rated	



Table 9.—Haul Roads, Log Landings, and Soil Rutting on Forestland—Continued

Map symbol and soil name	Pct. of map unit	Limitations affecting construction of haul roads and log landings		Suitability for log landings		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
AtcA: Atherton, very poorly drained-----	60	Moderate Saturated zone Low strength	0.75 0.50	Poorly suited Ponding Low strength	1.00 1.00	Severe Low strength	1.00
Atherton, poorly drained-----	30	Moderate Low strength	0.50	Poorly suited Saturated zone Low strength	1.00 0.50	Severe Low strength	1.00
CatbA: Catden-----	85	Slight		Poorly suited Ponding Low strength Saturated zone	1.00 1.00 1.00	Severe Low strength	1.00
ChkC: Chatfield-----	45	Severe Stoniness Depth to bedrock	1.00 0.50	Poorly suited Stoniness Slope Low strength	1.00 0.50 0.50	Severe Low strength	1.00
Hollis-----	30	Severe Stoniness Depth to bedrock	1.00 1.00	Poorly suited Stoniness Slope	1.00 0.50	Moderate Low strength	0.50
Rock outcrop-----	25	Not rated		Not rated		Not rated	
ChkE: Chatfield-----	45	Severe Slope Stoniness	1.00 1.00	Poorly suited Slope Stoniness Low strength	1.00 1.00 0.50	Severe Low strength	1.00
Hollis-----	30	Severe Slope Stoniness	1.00 1.00	Poorly suited Slope Stoniness	1.00 1.00	Moderate Low strength	0.50
Rock outcrop-----	20	Not rated		Not rated		Not rated	
ChwBc: Chippewa, extremely stony-----	80	Moderate Stoniness	0.50	Poorly suited Ponding Stoniness Low strength	1.00 0.50 0.50	Severe Low strength	1.00
CorA: Colonie-----	80	Moderate Sand content	0.50	Well suited		Moderate Low strength	0.50
CorB: Colonie-----	80	Moderate Sand content	0.50	Moderately suited Slope	0.50	Moderate Low strength	0.50
DefAr: Delaware, rarely flooded-----	80	Slight		Well suited		Moderate Low strength	0.50

Table 9.—Haul Roads, Log Landings, and Soil Rutting on Forestland—Continued

Map symbol and soil name	Pct. of map unit	Limitations affecting construction of haul roads and log landings		Suitability for log landings		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
DefBr: Delaware, rarely flooded-----	80	Slight		Moderately suited Slope	0.50	Moderate Low strength	0.50
FaxC: Farmington-----	50	Severe Stoniness Depth to bedrock Low strength	1.00 1.00 0.50	Poorly suited Stoniness Slope Low strength	1.00 0.50 0.50	Severe Low strength	1.00
Rock outcrop-----	40	Not rated		Not rated		Not rated	
FdwB: Farmington-----	40	Severe Depth to bedrock Stoniness Low strength	1.00 0.50 0.50	Moderately suited Stoniness Low strength	0.50 0.50	Severe Low strength	1.00
Wassaic-----	30	Moderate Depth to bedrock Stoniness	0.50 0.50	Moderately suited Stoniness Low strength	0.50 0.50	Severe Low strength	1.00
Rock outcrop-----	25	Not rated		Not rated		Not rated	
FmhAs: Fluvaquents, occasionally flooded-----	90	Severe Flooding Low strength	1.00 0.50	Poorly suited Flooding Saturated zone Low strength	1.00 1.00 0.50	Severe Low strength	1.00
FrdAb: Fredon, very stony--	45	Moderate Low strength Sand content	0.50 0.50	Moderately suited Saturated zone Low strength	0.50 0.50	Severe Low strength	1.00
Halsey, very stony--	40	Moderate Low strength Sand content	0.50 0.50	Poorly suited Ponding Low strength	1.00 0.50	Severe Low strength	1.00
GawEh: Galway, very rocky--	80	Severe Slope Stoniness	1.00 1.00	Poorly suited Slope Stoniness	1.00 1.00	Severe Low strength	1.00
HdxAb: Hazen, very stony---	50	Severe Stoniness Low strength Sand content	1.00 0.50 0.50	Moderately suited Low strength	0.50	Severe Low strength	1.00
Hoosic, very stony--	40	Moderate Sand content	0.50	Well suited		Moderate Low strength	0.50

Table 9.—Haul Roads, Log Landings, and Soil Rutting on Forestland—Continued

Map symbol and soil name	Pct. of map unit	Limitations affecting construction of haul roads and log landings		Suitability for log landings		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
HdxBb: Hazen, very stony---	60	Severe Stoniness Low strength Sand content	1.00 0.50 0.50	Moderately suited Low strength Slope	0.50 0.50	Severe Low strength	1.00
Hoosic, very stony--	35	Moderate Sand content	0.50	Moderately suited Slope	0.50	Moderate Low strength	0.50
HhmBc: Hibernia, extremely stony-----	80	Moderate Stoniness Low strength Sand content	0.50 0.50 0.50	Poorly suited Saturated zone Stoniness Low strength	1.00 0.50 0.50	Severe Low strength	1.00
HkrgBb: Hinckley, very stony	85	Moderate Sand content	0.50	Moderately suited Sand content Slope	0.50 0.50	Slight Low strength	0.10
HkrgCb: Hinckley, very stony	85	Moderate Sand content	0.50	Moderately suited Slope Sand content	0.50 0.50	Moderate Low strength	0.50
HncD: Hollis-----	45	Severe Stoniness Depth to bedrock Slope	1.00 1.00 0.50	Poorly suited Slope Stoniness	1.00 1.00	Moderate Low strength	0.50
Rock outcrop-----	30	Not rated		Not rated		Not rated	
Chatfield-----	20	Severe Stoniness Depth to bedrock Slope	1.00 1.00 0.50	Poorly suited Slope Stoniness Low strength	1.00 1.00 0.50	Severe Low strength	1.00
HonCb: Hoosic, very stony--	60	Moderate Sand content	0.50	Moderately suited Slope	0.50	Moderate Low strength	0.50
Hazen, very stony---	30	Severe Stoniness Low strength Sand content	1.00 0.50 0.50	Moderately suited Slope Low strength	0.50 0.50	Severe Low strength	1.00
HopEb: Hoosic, very stony--	50	Severe Slope	1.00	Poorly suited Slope	1.00	Moderate Low strength	0.50
Otisville, very stony-----	40	Severe Slope	1.00	Poorly suited Slope Sand content	1.00 0.50	Moderate Low strength	0.50

Table 9.—Haul Roads, Log Landings, and Soil Rutting on Forestland—Continued

Map symbol and soil name	Pct. of map unit	Limitations affecting construction of haul roads and log landings		Suitability for log landings		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
LacBc: Lackawanna, extremely stony----	85	Moderate Stoniness Low strength	0.50 0.50	Moderately suited Stoniness Low strength	0.50 0.50	Severe Low strength	1.00
LacCc: Lackawanna, extremely stony----	85	Moderate Stoniness Low strength	0.50 0.50	Moderately suited Slope Stoniness Low strength	0.50 0.50 0.50	Severe Low strength	1.00
LacDc: Lackawanna, extremely stony----	85	Moderate Slope Stoniness	0.50 0.50	Poorly suited Slope Stoniness Low strength	1.00 0.50 0.50	Severe Low strength	1.00
LorB: Lordstown-----	50	Moderate Depth to bedrock	0.50	Well suited		Severe Low strength	1.00
Wallpack-----	35	Moderate Low strength	0.50	Moderately suited Low strength	0.50	Severe Low strength	1.00
LorC: Lordstown-----	50	Moderate Depth to bedrock	0.50	Moderately suited Slope	0.50	Severe Low strength	1.00
Wallpack-----	35	Moderate Low strength	0.50	Moderately suited Slope Low strength	0.50 0.50	Severe Low strength	1.00
LorCh: Lordstown, very rocky-----	50	Moderate Depth to bedrock Stoniness	0.50 0.50	Moderately suited Slope Stoniness	0.50 0.50	Severe Low strength	1.00
Wallpack, very rocky	35	Moderate Stoniness Low strength	0.50 0.50	Moderately suited Slope Stoniness Low strength	0.50 0.50 0.50	Severe Low strength	1.00
LorD: Lordstown-----	50	Moderate Depth to bedrock Slope	0.50 0.50	Poorly suited Slope	1.00	Severe Low strength	1.00
Wallpack-----	35	Moderate Slope	0.50	Poorly suited Slope Low strength	1.00 0.50	Severe Low strength	1.00
LorDh: Lordstown, very rocky-----	50	Moderate Slope Depth to bedrock Stoniness	0.50 0.50 0.50	Poorly suited Slope Stoniness	1.00 0.50	Severe Low strength	1.00

Table 9.—Haul Roads, Log Landings, and Soil Rutting on Forestland—Continued

Map symbol and soil name	Pct. of map unit	Limitations affecting construction of haul roads and log landings		Suitability for log landings		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
LorDh: (cont.) Wallpack, very rocky	40	Moderate Slope Stoniness	0.50 0.50	Poorly suited Slope Stoniness Low strength	1.00 0.50 0.50	Severe Low strength	1.00
MabEh: Manlius, very rocky--	60	Severe Slope Stoniness	1.00 0.50	Poorly suited Slope Stoniness	1.00 0.50	Moderate Low strength	0.50
Nassau, very rocky--	25	Severe Slope Stoniness	1.00 0.50	Poorly suited Slope Stoniness	1.00 0.50	Moderate Low strength	0.50
NauBh: Nassau, very rocky--	50	Severe Depth to bedrock Stoniness Low strength	1.00 0.50 0.50	Moderately suited Stoniness Low strength	0.50 0.50	Severe Low strength	1.00
Manlius, very rocky--	45	Moderate Stoniness Low strength Depth to bedrock	0.50 0.50 0.50	Moderately suited Stoniness Low strength	0.50 0.50	Severe Low strength	1.00
NauCh: Nassau, very rocky--	55	Severe Depth to bedrock Stoniness Low strength	1.00 0.50 0.50	Moderately suited Slope Stoniness Low strength	0.50 0.50 0.50	Severe Low strength	1.00
Manlius, very rocky--	40	Moderate Depth to bedrock Stoniness Low strength	0.50 0.50 0.50	Moderately suited Slope Stoniness Low strength	0.50 0.50 0.50	Severe Low strength	1.00
NauDh: Nassau, very rocky--	50	Severe Depth to bedrock Slope Stoniness	1.00 0.50 0.50	Poorly suited Slope Stoniness Low strength	1.00 0.50 0.50	Severe Low strength	1.00
Manlius, very rocky--	40	Severe Depth to bedrock Slope Stoniness	1.00 0.50 0.50	Poorly suited Slope Stoniness Low strength	1.00 0.50 0.50	Severe Low strength	1.00
NavE: Nassau-----	50	Severe Slope Stoniness	1.00 0.50	Poorly suited Slope Stoniness	1.00 0.50	Moderate Low strength	0.50
Rock outcrop-----	45	Not rated		Not rated		Not rated	
OpnCh: Oquaga, very rocky--	55	Moderate Depth to bedrock Stoniness	0.50 0.50	Moderately suited Slope Stoniness	0.50 0.50	Severe Low strength	1.00

Table 9.—Haul Roads, Log Landings, and Soil Rutting on Forestland—Continued

Map symbol and soil name	Pct. of map unit	Limitations affecting construction of haul roads and log landings		Suitability for log landings		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
OpnCh: (cont.) Lackawanna, very rocky-----	30	Moderate Stoniness Low strength	0.50 0.50	Moderately suited Slope Stoniness Low strength	0.50 0.50 0.50	Severe Low strength	1.00
OpnDh: Oquaga, very rocky--	50	Severe Depth to bedrock Slope Stoniness	1.00 0.50 0.50	Poorly suited Slope Stoniness	1.00 0.50	Severe Low strength	1.00
Lackawanna, very rocky-----	35	Moderate Slope Stoniness	0.50 0.50	Poorly suited Slope Stoniness Low strength	1.00 0.50 0.50	Severe Low strength	1.00
OprC: Oquaga-----	75	Moderate Depth to bedrock Stoniness	0.50 0.50	Moderately suited Slope Stoniness	0.50 0.50	Severe Low strength	1.00
Rock outcrop-----	15	Not rated		Not rated		Not rated	
OprE: Oquaga-----	60	Severe Slope Stoniness	1.00 0.50	Poorly suited Slope Stoniness	1.00 0.50	Severe Low strength	1.00
Rock outcrop-----	25	Not rated		Not rated		Not rated	
PHG: Pits, sand and gravel-----	95	Not rated		Not rated		Not rated	
PohA: Pompton-----	80	Moderate Sand content	0.50	Poorly suited Saturated zone	1.00	Moderate Low strength	0.50
QY: Pits, quarry-----	100	Not rated		Not rated		Not rated	
RkrB: Riverhead-----	85	Moderate Sand content	0.50	Well suited		Moderate Low strength	0.50
RnaF: Rock outcrop-----	40	Not rated		Not rated		Not rated	
Arnot-----	30	Severe Slope Stoniness	1.00 1.00	Poorly suited Slope Stoniness	1.00 1.00	Severe Low strength	1.00
Rubble land-----	20	Not rated		Not rated		Not rated	

Table 9.—Haul Roads, Log Landings, and Soil Rutting on Forestland—Continued

Map symbol and soil name	Pct. of map unit	Limitations affecting construction of haul roads and log landings		Suitability for log landings		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
RnFC:							
Rock outcrop-----	40	Not rated		Not rated		Not rated	
Farmington-----	35	Severe		Moderately suited		Severe	
		Depth to bedrock	1.00	Slope	0.50	Low strength	1.00
		Stoniness	0.50	Stoniness	0.50		
		Low strength	0.50	Low strength	0.50		
Galway-----	25	Moderate		Moderately suited		Severe	
		Depth to bedrock	0.50	Slope	0.50	Low strength	1.00
		Stoniness	0.50	Stoniness	0.50		
RnFD:							
Rock outcrop-----	50	Not rated		Not rated		Not rated	
Farmington-----	40	Severe		Poorly suited		Severe	
		Depth to bedrock	1.00	Slope	1.00	Low strength	1.00
		Slope	0.50	Stoniness	0.50		
		Stoniness	0.50	Low strength	0.50		
Galway-----	10	Severe		Poorly suited		Severe	
		Depth to bedrock	1.00	Slope	1.00	Low strength	1.00
		Slope	0.50	Stoniness	0.50		
		Stoniness	0.50				
RoefBc:							
Rockaway, thin fragipan, extremely stony-----	85	Moderate		Moderately suited		Severe	
		Stoniness	0.50	Stoniness	0.50	Low strength	1.00
				Low strength	0.50		
RoefCc:							
Rockaway, thin fragipan, extremely stony-----	85	Moderate		Moderately suited		Severe	
		Stoniness	0.50	Slope	0.50	Low strength	1.00
				Stoniness	0.50		
				Low strength	0.50		
RoefDc:							
Rockaway, thin fragipan, extremely stony-----	85	Moderate		Poorly suited		Severe	
		Slope	0.50	Slope	1.00	Low strength	1.00
		Stoniness	0.50	Stoniness	0.50		
				Low strength	0.50		
RokB:							
Rockaway, thin fragipan-----	50	Moderate		Moderately suited		Severe	
		Stoniness	0.50	Stoniness	0.50	Low strength	1.00
				Low strength	0.50		
Chatfield-----	30	Moderate		Moderately suited		Severe	
		Depth to bedrock	0.50	Stoniness	0.50	Low strength	1.00
		Stoniness	0.50	Low strength	0.50		
Rock outcrop-----	20	Not rated		Not rated		Not rated	

Table 9.—Haul Roads, Log Landings, and Soil Rutting on Forestland—Continued

Map symbol and soil name	Pct. of map unit	Limitations affecting construction of haul roads and log landings		Suitability for log landings		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
RokC:							
Rockaway, thin fragipan-----	45	Moderate Stoniness	0.50	Moderately suited Slope Stoniness Low strength	0.50 0.50 0.50	Severe Low strength	1.00
Chatfield-----	40	Moderate Depth to bedrock Stoniness	0.50 0.50	Moderately suited Slope Stoniness Low strength	0.50 0.50 0.50	Severe Low strength	1.00
Rock outcrop-----	15	Not rated		Not rated		Not rated	
RokD:							
Rockaway, thin fragipan-----	45	Moderate Slope Stoniness	0.50 0.50	Poorly suited Slope Stoniness Low strength	1.00 0.50 0.50	Severe Low strength	1.00
Chatfield-----	25	Severe Depth to bedrock Slope Stoniness	1.00 0.50 0.50	Poorly suited Slope Stoniness Low strength	1.00 0.50 0.50	Severe Low strength	1.00
Rock outcrop-----	20	Not rated		Not rated		Not rated	
RooB:							
Rockaway, thin fragipan-----	50	Slight		Moderately suited Low strength	0.50	Severe Low strength	1.00
Urban land, Rockaway thin fragipan substratum-----	40	Not rated		Not rated		Not rated	
RooC:							
Rockaway, thin fragipan-----	45	Slight		Moderately suited Slope Low strength	0.50 0.50	Severe Low strength	1.00
Urban land, Rockaway thin fragipan substratum-----	40	Not rated		Not rated		Not rated	
RooD:							
Rockaway, thin fragipan-----	45	Moderate Slope	0.50	Poorly suited Slope Low strength	1.00 0.50	Severe Low strength	1.00
Urban land, Rockaway thin fragipan substratum-----	40	Not rated		Not rated		Not rated	
ScoA:							
Scio-----	80	Moderate Low strength	0.50	Moderately suited Low strength Saturated zone	0.50 0.50	Severe Low strength	1.00



Table 9.—Haul Roads, Log Landings, and Soil Rutting on Forestland—Continued

Map symbol and soil name	Pct. of map unit	Limitations affecting construction of haul roads and log landings		Suitability for log landings		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
SwfBc: Swartswood, extremely stony----	90	Moderate Stoniness	0.50	Moderately suited Stoniness	0.50	Severe Low strength	1.00
SwfCc: Swartswood, extremely stony----	90	Moderate Stoniness	0.50	Moderately suited Slope Stoniness	0.50 0.50	Severe Low strength	1.00
SwfDc: Swartswood, extremely stony----	85	Moderate Slope Stoniness	0.50 0.50	Poorly suited Slope Stoniness	1.00 0.50	Severe Low strength	1.00
UccAs: Udifluvents, occasionally flooded-----	90	Severe Flooding	1.00	Poorly suited Flooding	1.00	Moderate Low strength	0.50
UdaB: Udorthents-----	100	Moderate Low strength	0.50	Moderately suited Low strength	0.50	Severe Low strength	1.00
UdauB: Udorthents-----	60	Moderate Low strength	0.50	Moderately suited Low strength	0.50	Severe Low strength	1.00
Urban land-----	40	Not rated		Not rated		Not rated	
UnfA: Unadilla-----	80	Moderate Low strength	0.50	Moderately suited Low strength	0.50	Severe Low strength	1.00
UnfB: Unadilla-----	80	Moderate Low strength	0.50	Moderately suited Low strength Slope	0.50 0.50	Severe Low strength	1.00
USCHRB: Urban land, Chatfield substratum-----	40	Not rated		Not rated		Not rated	
Chatfield-----	25	Moderate Depth to bedrock	0.50	Moderately suited Low strength	0.50	Severe Low strength	1.00
Rock outcrop-----	20	Not rated		Not rated		Not rated	
USCHRC: Urban land, Chatfield substratum-----	40	Not rated		Not rated		Not rated	

Table 9.—Haul Roads, Log Landings, and Soil Rutting on Forestland—Continued

Map symbol and soil name	Pct. of map unit	Limitations affecting construction of haul roads and log landings		Suitability for log landings		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
USCHRC: (cont.)							
Chatfield-----	25	Moderate Depth to bedrock	0.50	Moderately suited Slope Low strength	0.50 0.50	Severe Low strength	1.00
Rock outcrop-----	20	Not rated		Not rated		Not rated	
USCHRD:							
Urban land, Chatfield substratum-----	40	Not rated		Not rated		Not rated	
Chatfield-----	25	Severe Depth to bedrock Slope	1.00 0.50	Poorly suited Slope Low strength	1.00 0.50	Severe Low strength	1.00
Rock outcrop-----	20	Not rated		Not rated		Not rated	
USFARC:							
Urban land, Farmington substratum-----	50	Not rated		Not rated		Not rated	
Farmington-----	30	Severe Depth to bedrock Low strength	1.00 0.50	Moderately suited Slope Low strength	0.50 0.50	Severe Low strength	1.00
Rock outcrop-----	20	Not rated		Not rated		Not rated	
USFARD:							
Urban land, Farmington substratum-----	40	Not rated		Not rated		Not rated	
Farmington-----	35	Severe Depth to bedrock Slope	1.00 0.50	Poorly suited Slope Low strength	1.00 0.50	Severe Low strength	1.00
Rock outcrop-----	25	Not rated		Not rated		Not rated	
USFAWB:							
Urban land, Farmington substratum-----	50	Not rated		Not rated		Not rated	
Farmington-----	30	Severe Depth to bedrock Low strength	1.00 0.50	Moderately suited Low strength	0.50	Severe Low strength	1.00
Wassaic-----	20	Moderate Depth to bedrock	0.50	Moderately suited Low strength	0.50	Severe Low strength	1.00
USHAZA:							
Urban land, Hazen substratum-----	45	Not rated		Not rated		Not rated	
Hazen-----	35	Severe Stoniness Low strength Sand content	1.00 0.50 0.50	Moderately suited Low strength	0.50	Severe Low strength	1.00

Table 9.—Haul Roads, Log Landings, and Soil Rutting on Forestland—Continued

Map symbol and soil name	Pct. of map unit	Limitations affecting construction of haul roads and log landings		Suitability for log landings		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
USHAZA: (cont.)							
Hoosic-----	20	Moderate Sand content	0.50	Well suited		Moderate Low strength	0.50
USHAZB:							
Urban land, Hazen substratum-----	55	Not rated		Not rated		Not rated	
Hazen-----	25	Severe Stoniness Low strength Sand content	1.00 0.50 0.50	Moderately suited Low strength Slope	0.50 0.50	Severe Low strength	1.00
Hoosic-----	20	Moderate Sand content	0.50	Moderately suited Slope	0.50	Moderate Low strength	0.50
USNAMB:							
Urban land, Nassau substratum-----	45	Not rated		Not rated		Not rated	
Nassau-----	30	Severe Depth to bedrock Low strength	1.00 0.50	Moderately suited Low strength	0.50	Severe Low strength	1.00
Manlius-----	25	Moderate Low strength Depth to bedrock	0.50 0.50	Moderately suited Low strength	0.50	Severe Low strength	1.00
USNAMC:							
Urban land, Nassau substratum-----	55	Not rated		Not rated		Not rated	
Nassau-----	25	Severe Depth to bedrock Low strength	1.00 0.50	Moderately suited Slope Low strength	0.50 0.50	Severe Low strength	1.00
Manlius-----	20	Moderate Depth to bedrock Low strength	0.50 0.50	Moderately suited Slope Low strength	0.50 0.50	Severe Low strength	1.00
USNAMD:							
Urban land, Nassau substratum-----	60	Not rated		Not rated		Not rated	
Nassau-----	25	Severe Depth to bedrock Slope	1.00 0.50	Poorly suited Slope Low strength	1.00 0.50	Severe Low strength	1.00
Manlius-----	15	Severe Depth to bedrock Slope	1.00 0.50	Poorly suited Slope Low strength	1.00 0.50	Severe Low strength	1.00
USWUSB:							
Urban land, Wurtsboro substratum-----	45	Not rated		Not rated		Not rated	
Wurtsboro-----	35	Slight		Moderately suited Saturated zone	0.50	Severe Low strength	1.00
Swartswood-----	20	Slight		Well suited		Severe Low strength	1.00

Table 9.—Haul Roads, Log Landings, and Soil Rutting on Forestland—Continued

Map symbol and soil name	Pct. of map unit	Limitations affecting construction of haul roads and log landings		Suitability for log landings		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
VepBc: Venango, extremely stony-----	90	Moderate Stoniness Low strength	0.50 0.50	Poorly suited Saturated zone Stoniness Low strength	1.00 0.50 0.50	Severe Low strength	1.00
VepCc: Venango, extremely stony-----	85	Moderate Stoniness Low strength	0.50 0.50	Poorly suited Saturated zone Slope Stoniness Low strength	1.00 0.50 0.50 0.50	Severe Low strength	1.00
WaahAt: Wallkill, frequently flooded-----	90	Severe Flooding Low strength	1.00 0.50	Poorly suited Ponding Flooding Low strength Saturated zone	1.00 1.00 1.00 1.00	Severe Low strength	1.00
WabEb: Wallpack, aeolian mantle, very stony-	85	Slight		Well suited		Moderate Low strength	0.50
WabCb: Wallpack, aeolian mantle, very stony-	85	Slight		Moderately suited Slope	0.50	Moderate Low strength	0.50
WabDb: Wallpack, aeolian mantle, very stony-	85	Moderate Slope	0.50	Poorly suited Slope	1.00	Moderate Low strength	0.50
WacB: Wallpack-----	85	Moderate Low strength	0.50	Moderately suited Low strength	0.50	Severe Low strength	1.00
WacBc: Wallpack, extremely stony-----	85	Moderate Stoniness Low strength	0.50 0.50	Moderately suited Stoniness Low strength	0.50 0.50	Severe Low strength	1.00
WacC: Wallpack-----	85	Moderate Low strength	0.50	Moderately suited Slope Low strength	0.50 0.50	Severe Low strength	1.00
WacCc: Wallpack, extremely stony-----	85	Moderate Stoniness Low strength	0.50 0.50	Moderately suited Slope Stoniness Low strength	0.50 0.50 0.50	Severe Low strength	1.00

Table 9.—Haul Roads, Log Landings, and Soil Rutting on Forestland—Continued

Map symbol and soil name	Pct. of map unit	Limitations affecting construction of haul roads and log landings		Suitability for log landings		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
WacD: Wallpack-----	85	Moderate Slope	0.50	Poorly suited Slope Low strength	1.00 0.50	Severe Low strength	1.00
WacDc: Wallpack, extremely stony-----	85	Moderate Slope Stoniness	0.50 0.50	Poorly suited Slope Stoniness Low strength	1.00 0.50 0.50	Severe Low strength	1.00
WATER: Water-----	100	Not rated		Not rated		Not rated	
WecBc: Wellsboro, extremely stony-----	85	Moderate Stoniness Low strength	0.50 0.50	Moderately suited Stoniness Low strength	0.50 0.50	Severe Low strength	1.00
WecCc: Wellsboro, extremely stony-----	85	Moderate Stoniness Low strength	0.50 0.50	Moderately suited Slope Stoniness Low strength	0.50 0.50 0.50	Severe Low strength	1.00
WumBc: Wurtsboro, extremely stony-----	85	Moderate Stoniness	0.50	Moderately suited Stoniness Saturated zone	0.50 0.50	Severe Low strength	1.00
WusBc: Wurtsboro, extremely stony-----	60	Moderate Stoniness	0.50	Moderately suited Stoniness Saturated zone	0.50 0.50	Severe Low strength	1.00
Swartswood, extremely stony----	40	Moderate Stoniness	0.50	Moderately suited Stoniness	0.50	Severe Low strength	1.00
WusCc: Wurtsboro, extremely stony-----	60	Moderate Stoniness	0.50	Moderately suited Slope Stoniness Saturated zone	0.50 0.50 0.50	Severe Low strength	1.00
Swartswood, extremely stony----	40	Moderate Stoniness	0.50	Moderately suited Slope Stoniness	0.50 0.50	Severe Low strength	1.00

Table 9.—Haul Roads, Log Landings, and Soil Rutting on Forestland—Continued

Map symbol and soil name	Pct. of map unit	Limitations affecting construction of haul roads and log landings		Suitability for log landings		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
WusDc: Wurtsboro, extremely stony-----	80	Moderate Slope Stoniness	0.50 0.50	Poorly suited Slope Stoniness Saturated zone	1.00 0.50 0.50	Severe Low strength	1.00
Swartswood, extremely stony----	20	Moderate Slope Stoniness	0.50 0.50	Poorly suited Slope Stoniness	1.00 0.50	Severe Low strength	1.00

Table 10.—Hazard of Erosion and Suitability for Roads on Forestland

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
AhbBc: Alden, extremely stony-----	90	Slight		Slight		Poorly suited Ponding Stoniness Low strength	 1.00 0.50 0.50
AhcBc: Alden, gneiss till substratum, extremely stony----	90	Slight		Slight		Poorly suited Ponding Low strength Stoniness Stickiness; high plasticity index	 1.00 1.00 0.50 0.50
AruCh: Arnot, very rocky---	55	Slight		Moderate Slope/erodibility	0.50	Poorly suited Stoniness Slope	 1.00 0.50
Lordstown, very rocky-----	40	Slight		Moderate Slope/erodibility	0.50	Poorly suited Stoniness Slope	 1.00 0.50
ArvD: Arnot-----	45	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Stoniness	 1.00 1.00
Lordstown-----	40	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Stoniness	 1.00 1.00
Rock outcrop-----	15	Not rated		Not rated		Not rated	
ArvE: Arnot-----	60	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Stoniness	 1.00 1.00
Lordstown-----	25	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Stoniness	 1.00 1.00
Rock outcrop-----	15	Not rated		Not rated		Not rated	
AtcA: Atherton, very poorly drained----	60	Slight		Slight		Poorly suited Ponding Low strength	 1.00 1.00

Table 10.—Hazard of Erosion and Suitability for Roads on Forestland—Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
AtcA: (cont.) Atherton, poorly drained-----	30	Slight		Slight		Poorly suited Saturated zone Low strength	1.00 0.50
CatbA: Catden-----	85	Slight		Slight		Poorly suited Ponding Low strength Saturated zone	1.00 1.00 1.00
ChkC: Chatfield-----	45	Slight		Moderate Slope/erodibility	0.50	Poorly suited Stoniness Slope Low strength	1.00 0.50 0.50
Hollis-----	30	Slight		Moderate Slope/erodibility	0.50	Poorly suited Stoniness Slope	1.00 0.50
Rock outcrop-----	25	Not rated		Not rated		Not rated	
ChkE: Chatfield-----	45	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Stoniness Low strength	1.00 1.00 0.50
Hollis-----	30	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Stoniness	1.00 1.00
Rock outcrop-----	20	Not rated		Not rated		Not rated	
ChwBc: Chippewa, extremely stony-----	80	Slight		Slight		Poorly suited Ponding Stoniness Low strength	1.00 0.50 0.50
CorA: Colonie-----	80	Slight		Slight		Well suited	
CorB: Colonie-----	80	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope	0.50
DefAr: Delaware, rarely flooded-----	80	Slight		Slight		Well suited	
DefBr: Delaware, rarely flooded-----	80	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope	0.50



Table 10.—Hazard of Erosion and Suitability for Roads on Forestland—Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
FaxC: Farmington-----	50	Slight		Moderate Slope/erodibility	0.50	Poorly suited Stoniness Slope Low strength	1.00 0.50 0.50
Rock outcrop-----	40	Not rated		Not rated		Not rated	
FdwB: Farmington-----	40	Slight		Moderate Slope/erodibility	0.50	Moderately suited Stoniness Low strength	0.50 0.50
Wassaic-----	30			Slope/erodibility	0.50	Stoniness Low strength	0.50 0.50
Rock outcrop-----	25	Not rated		Not rated		Not rated	
FmhAs: Fluvaquents, occasionally flooded-----	90	Slight		Slight		Poorly suited Flooding Saturated zone Low strength	1.00 1.00 0.50
FrdAb: Fredon, very stony--	45	Slight		Slight		Moderately suited Saturated zone Low strength	0.50 0.50
Halsey, very stony--	40	Slight		Slight		Poorly suited Ponding Low strength	1.00 0.50
GawEh: Galway, very rocky--	80	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Stoniness	1.00 1.00
HdxAb: Hazen, very stony---	50	Slight		Slight		Moderately suited Low strength	0.50
Hoosic, very stony--	40	Slight		Slight		Well suited	
HdxBb: Hazen, very stony---	60	Slight		Moderate Slope/erodibility	0.50	Moderately suited Low strength Slope	0.50 0.50
Hoosic, very stony--	35	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope	0.50
HhmBc: Hibernia, extremely stony-----	80	Slight		Slight		Poorly suited Saturated zone Stoniness Low strength	1.00 0.50 0.50

Table 10.—Hazard of Erosion and Suitability for Roads on Forestland—Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
HkrgBb: Hinckley, very stony	85	Slight		Slight		Moderately suited Sand content Slope	0.50 0.50
HkrgCb: Hinckley, very stony	85	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope Sand content	0.50 0.50
HncD: Hollis-----	45	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Stoniness	1.00 1.00
Rock outcrop-----	30	Not rated		Not rated		Not rated	
Chatfield-----	20	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Stoniness Low strength	1.00 1.00 0.50
HonCb: Hoosic, very stony--	60	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope	0.50
Hazen, very stony---	30	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope Low strength	0.50 0.50
HopEb: Hoosic, very stony--	50	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
Otisville, very stony-----	40	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Sand content	1.00 0.50
LacBc: Lackawanna, extremely stony----	85	Slight		Slight		Moderately suited Stoniness Low strength	0.50 0.50
LacCc: Lackawanna, extremely stony----	85	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope Stoniness Low strength	0.50 0.50 0.50
LacDc: Lackawanna, extremely stony----	85	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Stoniness Low strength	1.00 0.50 0.50

Table 10.—Hazard of Erosion and Suitability for Roads on Forestland—Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
LorB:							
Lordstown-----	50	Slight		Moderate Slope/erodibility	0.50	Well suited	
Wallpack-----	35	Slight		Moderate Slope/erodibility	0.50	Moderately suited Low strength	0.50
LorC:							
Lordstown-----	50	Slight		Severe Slope/erodibility	0.95	Moderately suited Slope	0.50
Wallpack-----	35	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Moderately suited Slope Low strength	0.50 0.50
LorCh:							
Lordstown, very rocky-----	50	Slight		Severe Slope/erodibility	0.95	Moderately suited Slope Stoniness	0.50 0.50
Wallpack, very rocky	35	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Moderately suited Slope Stoniness Low strength	0.50 0.50 0.50
LorD:							
Lordstown-----	50	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
Wallpack-----	35	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
LorDh:							
Lordstown, very rocky-----	50	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Stoniness	1.00 0.50
Wallpack, very rocky	40	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Stoniness Low strength	1.00 0.50 0.50
MabEh:							
Manlius, very rocky-	60	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Stoniness	1.00 0.50
Nassau, very rocky--	25	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Stoniness	1.00 0.50
NauBh:							
Nassau, very rocky--	50	Slight		Moderate Slope/erodibility	0.50	Moderately suited Stoniness Low strength	0.50 0.50
Manlius, very rocky-	45	Slight		Moderate Slope/erodibility	0.50	Moderately suited Stoniness Low strength	0.50 0.50

Table 10.—Hazard of Erosion and Suitability for Roads on Forestland—Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
NauCh:							
Nassau, very rocky--	55	Slight		Severe Slope/erodibility	0.95	Moderately suited Slope Stoniness Low strength	0.50 0.50 0.50
Manlius, very rocky--	40	Slight		Severe Slope/erodibility	0.95	Moderately suited Slope Stoniness Low strength	0.50 0.50 0.50
NauDh:							
Nassau, very rocky--	50	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Stoniness Low strength	1.00 0.50 0.50
Manlius, very rocky--	40	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Stoniness Low strength	1.00 0.50 0.50
NavE:							
Nassau-----	50	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
Rock outcrop-----	45	Not rated		Not rated		Not rated	
OpnCh:							
Oquaga, very rocky--	55	Slight		Severe Slope/erodibility	0.95	Moderately suited Slope Stoniness	0.50 0.50
Lackawanna, very rocky-----	30	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope Stoniness Low strength	0.50 0.50 0.50
OpnDh:							
Oquaga, very rocky--	50	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Stoniness	1.00 0.50
Lackawanna, very rocky-----	35	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Stoniness Low strength	1.00 0.50 0.50
OprC:							
Oquaga-----	75	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope Stoniness	0.50 0.50
Rock outcrop-----	15	Not rated		Not rated		Not rated	

Table 10.—Hazard of Erosion and Suitability for Roads on Forestland—Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
OprE: Oquaga-----	60	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Stoniness	1.00 0.50
Rock outcrop-----	25	Not rated		Not rated		Not rated	
PHG: Pits, sand and gravel-----	95	Not rated		Not rated		Not rated	
PohA: Pompton-----	80	Slight		Slight		Poorly suited Saturated zone	1.00
QY: Pits, quarry-----	100	Not rated		Not rated		Not rated	
RkrB: Riverhead-----	85	Slight		Moderate Slope/erodibility	0.50	Well suited	
RnaF: Rock outcrop-----	40	Not rated		Not rated		Not rated	
Arnot-----	30	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope Stoniness	1.00 1.00
Rubble land-----	20	Not rated		Not rated		Not rated	
RnfC: Rock outcrop-----	40	Not rated		Not rated		Not rated	
Farmington-----	35	Slight		Severe Slope/erodibility	0.95	Moderately suited Slope Stoniness Low strength	0.50 0.50 0.50
Galway-----	25	Slight		Severe Slope/erodibility	0.95	Moderately suited Slope Stoniness	0.50 0.50
RnfD: Rock outcrop-----	50	Not rated		Not rated		Not rated	
Farmington-----	40	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Stoniness Low strength	1.00 0.50 0.50
Galway-----	10	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Stoniness	1.00 0.50
RoefBc: Rockaway, thin fragipan, extremely stony-----	85	Slight		Moderate Slope/erodibility	0.50	Moderately suited Stoniness Low strength	0.50 0.50

Table 10.—Hazard of Erosion and Suitability for Roads on Forestland—Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
RoefCc: Rockaway, thin fragipan, extremely stony-----	85	Slight		Severe Slope/erodibility	0.95	Moderately suited Slope Stoniness Low strength	0.50 0.50 0.50
RoefDc: Rockaway, thin fragipan, extremely stony-----	85	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Stoniness Low strength	1.00 0.50 0.50
RokB: Rockaway, thin fragipan-----	50	Slight		Moderate Slope/erodibility	0.50	Moderately suited Stoniness Low strength	0.50 0.50
Chatfield-----	30	Slight		Slight		Moderately suited Stoniness Low strength	0.50 0.50
Rock outcrop-----	20	Not rated		Not rated		Not rated	
RokC: Rockaway, thin fragipan-----	45	Slight		Severe Slope/erodibility	0.95	Moderately suited Slope Stoniness Low strength	0.50 0.50 0.50
Chatfield-----	40	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope Stoniness Low strength	0.50 0.50 0.50
Rock outcrop-----	15	Not rated		Not rated		Not rated	
RokD: Rockaway, thin fragipan-----	45	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Stoniness Low strength	1.00 0.50 0.50
Chatfield-----	25	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Stoniness Low strength	1.00 0.50 0.50
Rock outcrop-----	20	Not rated		Not rated		Not rated	
RooB: Rockaway, thin fragipan-----	50	Slight		Moderate Slope/erodibility	0.50	Moderately suited Low strength	0.50

Table 10.—Hazard of Erosion and Suitability for Roads on Forestland—Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
RooB: (cont.) Urban land, Rockaway thin fragipan substratum-----	40	Not rated		Not rated		Not rated	
RooC: Rockaway, thin fragipan-----	45	Slight		Severe Slope/erodibility	0.95	Moderately suited Slope Low strength	0.50 0.50
Urban land, Rockaway thin fragipan substratum-----	40	Not rated		Not rated		Not rated	
RooD: Rockaway, thin fragipan-----	45	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
Urban land, Rockaway thin fragipan substratum-----	40	Not rated		Not rated		Not rated	
ScoA: Scio-----	80	Slight		Slight		Moderately suited Low strength Saturated zone	0.50 0.50
SwfBc: Swartswood, extremely stony----	90	Slight		Moderate Slope/erodibility	0.50	Moderately suited Stoniness	0.50
SwfCc: Swartswood, extremely stony----	90	Slight		Severe Slope/erodibility	0.95	Moderately suited Slope Stoniness	0.50 0.50
SwfDc: Swartswood, extremely stony----	85	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Stoniness	1.00 0.50
UccAs: Udifluvents, occasionally flooded-----	90	Slight		Slight		Poorly suited Flooding	1.00
UdaB: Udorthents-----	100	Slight		Moderate Slope/erodibility	0.50	Moderately suited Low strength	0.50

Table 10.—Hazard of Erosion and Suitability for Roads on Forestland—Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Udaub:							
Udorthents-----	60	Slight		Moderate Slope/erodibility	0.50	Moderately suited Low strength	0.50
Urban land-----	40	Not rated		Not rated		Not rated	
UnfA:							
Unadilla-----	80	Slight		Slight		Moderately suited Low strength	0.50
UnfB:							
Unadilla-----	80	Slight		Moderate Slope/erodibility	0.50	Moderately suited Low strength Slope	0.50 0.50
USCHRB:							
Urban land, Chatfield substratum-----	40	Not rated		Not rated		Not rated	
Chatfield-----	25	Slight		Slight		Moderately suited Low strength	0.50
Rock outcrop-----	20	Not rated		Not rated		Not rated	
USCHRC:							
Urban land, Chatfield substratum-----	40	Not rated		Not rated		Not rated	
Chatfield-----	25	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope Low strength	0.50 0.50
Rock outcrop-----	20	Not rated		Not rated		Not rated	
USCHRD:							
Urban land, Chatfield substratum-----	40	Not rated		Not rated		Not rated	
Chatfield-----	25	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
Rock outcrop-----	20	Not rated		Not rated		Not rated	
USFARC:							
Urban land, Farmington substratum-----	50	Not rated		Not rated		Not rated	
Farmington-----	30	Slight		Severe Slope/erodibility	0.95	Moderately suited Slope Low strength	0.50 0.50
Rock outcrop-----	20	Not rated		Not rated		Not rated	



Table 10.—Hazard of Erosion and Suitability for Roads on Forestland—Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
USFARD: Urban land, Farmington substratum-----	40	Not rated		Not rated		Not rated	
Farmington-----	35	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
Rock outcrop-----	25	Not rated		Not rated		Not rated	
USFAWB: Urban land, Farmington substratum-----	50	Not rated		Not rated		Not rated	
Farmington-----	30	Slight		Moderate Slope/erodibility	0.50	Moderately suited Low strength	0.50
Wassaic-----	20	Slight		Moderate Slope/erodibility	0.50	Moderately suited Low strength	0.50
USHAZA: Urban land, Hazen substratum-----	45	Not rated		Not rated		Not rated	
Hazen-----	35	Slight		Slight		Moderately suited Low strength	0.50
Hoosic-----	20	Slight		Slight		Well suited	
USHAZB: Urban land, Hazen substratum-----	55	Not rated		Not rated		Not rated	
Hazen-----	25	Slight		Moderate Slope/erodibility	0.50	Moderately suited Low strength Slope	0.50 0.50
Hoosic-----	20	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope	0.50
USNAMB: Urban land, Nassau substratum-----	45	Not rated		Not rated		Not rated	
Nassau-----	30	Slight		Moderate Slope/erodibility	0.50	Moderately suited Low strength	0.50
Manlius-----	25	Slight		Moderate Slope/erodibility	0.50	Moderately suited Low strength	0.50

Table 10.—Hazard of Erosion and Suitability for Roads on Forestland—Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
USNAMC:							
Urban land, Nassau substratum-----	55	Not rated		Not rated		Not rated	
Nassau-----	25	Slight		Severe Slope/erodibility	0.95	Moderately suited Slope Low strength	0.50 0.50
Manlius-----	20	Slight		Severe Slope/erodibility	0.95	Moderately suited Slope Low strength	0.50 0.50
USNAMD:							
Urban land, Nassau substratum-----	60	Not rated		Not rated		Not rated	
Nassau-----	25	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
Manlius-----	15	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
USWUSB:							
Urban land, Wurtsboro substratum-----	45	Not rated		Not rated		Not rated	
Wurtsboro-----	35	Slight		Moderate Slope/erodibility	0.50	Moderately suited Saturated zone	0.50
Swartswood-----	20	Slight		Moderate Slope/erodibility	0.50	Well suited	
VepBc:							
Venango, extremely stony-----	90	Slight		Slight		Poorly suited Saturated zone Stoniness Low strength	1.00 0.50 0.50
VepCc:							
Venango, extremely stony-----	85	Slight		Moderate Slope/erodibility	0.50	Poorly suited Saturated zone Slope Stoniness Low strength	1.00 0.50 0.50 0.50
WaahAt:							
Wallkill, frequently flooded-----	90	Slight		Slight		Poorly suited Ponding Flooding Low strength Saturated zone	1.00 1.00 1.00 1.00
WabBb:							
Wallpack, aeolian mantle, very stony-	85	Slight		Moderate Slope/erodibility	0.50	Well suited	

Table 10.—Hazard of Erosion and Suitability for Roads on Forestland—Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
WabCb: Wallpack, aeolian mantle, very stony-	85	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Moderately suited Slope	0.50
WabDb: Wallpack, aeolian mantle, very stony-	85	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
WacB: Wallpack-----	85	Slight		Moderate Slope/erodibility	0.50	Moderately suited Low strength	0.50
WacBc: Wallpack, extremely stony-----	85	Slight		Moderate Slope/erodibility	0.50	Moderately suited Stoniness Low strength	0.50 0.50
WacC: Wallpack-----	85	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Moderately suited Slope Low strength	0.50 0.50
WacCc: Wallpack, extremely stony-----	85	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Moderately suited Slope Stoniness Low strength	0.50 0.50 0.50
WacD: Wallpack-----	85	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
WacDc: Wallpack, extremely stony-----	85	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Stoniness Low strength	1.00 0.50 0.50
WATER: Water-----	100	Not rated		Not rated		Not rated	
WecBc: Wellsboro, extremely stony-----	85	Slight		Slight		Moderately suited Stoniness Low strength	0.50 0.50
WecCc: Wellsboro, extremely stony-----	85	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope Stoniness Low strength	0.50 0.50 0.50

Table 10.—Hazard of Erosion and Suitability for Roads on Forestland—Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
WumBc: Wurtsboro, extremely stony-----	85	Slight		Moderate Slope/erodibility	0.50	Moderately suited Stoniness Saturated zone	0.50 0.50
WusBc: Wurtsboro, extremely stony-----	60	Slight		Moderate Slope/erodibility	0.50	Moderately suited Stoniness Saturated zone	0.50 0.50
Swartswood, extremely stony----	40	Slight		Moderate Slope/erodibility	0.50	Moderately suited Stoniness	0.50
WusCc: Wurtsboro, extremely stony-----	60	Slight		Severe Slope/erodibility	0.95	Moderately suited Slope Stoniness Saturated zone	0.50 0.50 0.50
Swartswood, extremely stony----	40	Slight		Severe Slope/erodibility	0.95	Moderately suited Slope Stoniness	0.50 0.50
WusDc: Wurtsboro, extremely stony-----	80	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Stoniness Saturated zone	1.00 0.50 0.50
Swartswood, extremely stony----	20	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Stoniness	1.00 0.50

Table 11.—Forestland Planting and Harvesting

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
AhbBc: Alden, extremely stony-----	90	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments	0.75	Moderately suited Stoniness Low strength	0.50 0.50
AhcBc: Alden, gneiss till substratum, extremely stony----	90	Moderately suited Rock fragments Stickiness; high plasticity index	0.50 0.50	Poorly suited Rock fragments Stickiness; high plasticity index	0.75 0.50	Poorly suited Low strength Stoniness Stickiness; high plasticity index	1.00 0.50 0.50
AruCh: Arnot, very rocky---	55	Poorly suited Rock fragments	0.75	Unsuited Rock fragments Slope	1.00 0.50	Poorly suited Stoniness	1.00
Lordstown, very rocky-----	40	Poorly suited Rock fragments	0.75	Unsuited Rock fragments Slope	1.00 0.50	Poorly suited Stoniness	1.00
ArvD: Arnot-----	45	Poorly suited Rock fragments	0.75	Unsuited Rock fragments Slope	1.00 0.75	Poorly suited Stoniness Slope	1.00 0.50
Lordstown-----	40	Poorly suited Rock fragments	0.75	Unsuited Rock fragments Slope	1.00 0.75	Poorly suited Stoniness Slope	1.00 0.50
Rock outcrop-----	15	Not rated		Not rated		Not rated	
ArvE: Arnot-----	60	Poorly suited Rock fragments Slope	0.75 0.50	Unsuited Slope Rock fragments	1.00 1.00	Poorly suited Stoniness Slope	1.00 1.00
Lordstown-----	25	Poorly suited Rock fragments Slope	0.75 0.50	Unsuited Slope Rock fragments	1.00 1.00	Poorly suited Stoniness Slope	1.00 1.00
Rock outcrop-----	15	Not rated		Not rated		Not rated	
AtcA: Atherton, very poorly drained-----	60	Poorly suited Wetness	0.75	Poorly suited Wetness	0.75	Poorly suited Low strength Wetness	1.00 0.75

Table 11.—Forestland Planting and Harvesting—Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
AtcA: (cont.) Atherton, poorly drained-----	30	Well suited		Well suited		Moderately suited Low strength	0.50
CatbA: Catden-----	85	Well suited		Well suited		Poorly suited Low strength	1.00
ChkC: Chatfield-----	45	Poorly suited Rock fragments	0.75	Unsuited Rock fragments Slope	1.00 0.50	Poorly suited Stoniness Low strength	1.00 0.50
Hollis-----	30	Poorly suited Rock fragments	0.75	Unsuited Rock fragments Slope	1.00 0.50	Poorly suited Stoniness	1.00
Rock outcrop-----	25	Not rated		Not rated		Not rated	
ChkE: Chatfield-----	45	Poorly suited Rock fragments Slope	0.75 0.50	Unsuited Slope Rock fragments	1.00 1.00	Poorly suited Stoniness Slope Low strength	1.00 1.00 0.50
Hollis-----	30	Poorly suited Rock fragments Slope	0.75 0.50	Unsuited Slope Rock fragments	1.00 1.00	Poorly suited Stoniness Slope	1.00 1.00
Rock outcrop-----	20	Not rated		Not rated		Not rated	
ChwBc: Chippewa, extremely stony-----	80	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments	0.75	Moderately suited Stoniness Low strength	0.50 0.50
CorA: Colonie-----	80	Well suited		Well suited		Well suited	
CorB: Colonie-----	80	Well suited		Moderately suited Slope	0.50	Well suited	
DefAr: Delaware, rarely flooded-----	80	Well suited		Well suited		Well suited	
DefBr: Delaware, rarely flooded-----	80	Well suited		Moderately suited Slope	0.50	Well suited	
FaxC: Farmington-----	50	Poorly suited Rock fragments	0.75	Unsuited Rock fragments Slope	1.00 0.50	Poorly suited Stoniness Low strength	1.00 0.50
Rock outcrop-----	40	Not rated		Not rated		Not rated	

Table 11.—Forestland Planting and Harvesting—Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
<b>FdwB:</b>							
Farmington-----	40	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments	0.75	Moderately suited Stoniness Low strength	0.50 0.50
Wassaic-----	30	Moderately suited Rock fragments Stickiness; high plasticity index	0.50 0.50	Poorly suited Rock fragments Stickiness; high plasticity index	0.75 0.50	Moderately suited Stoniness Low strength	0.50 0.50
Rock outcrop-----	25	Not rated		Not rated		Not rated	
<b>FmhAs:</b>							
Fluvaquents, occasionally flooded-----	90	Moderately suited Stickiness; high plasticity index	0.50	Moderately suited Stickiness; high plasticity index	0.50	Moderately suited Low strength	0.50
<b>FrdAb:</b>							
Fredon, very stony--	45	Well suited		Moderately suited Rock fragments	0.50	Moderately suited Low strength	0.50
Halsey, very stony--	40	Well suited		Moderately suited Rock fragments	0.50	Moderately suited Low strength	0.50
<b>GawEh:</b>							
Galway, very rocky--	80	Poorly suited Rock fragments Slope	0.75 0.50	Unsuited Slope Rock fragments	1.00 1.00	Poorly suited Stoniness Slope	1.00 1.00
<b>HdxAb:</b>							
Hazen, very stony---	50	Well suited		Moderately suited Rock fragments	0.50	Moderately suited Low strength	0.50
Hoosic, very stony--	40	Moderately suited Rock fragments	0.50	Moderately suited Rock fragments	0.50	Well suited	
<b>HdxBb:</b>							
Hazen, very stony---	60	Well suited		Moderately suited Rock fragments Slope	0.50 0.50	Moderately suited Low strength	0.50
Hoosic, very stony--	35	Moderately suited Rock fragments	0.50	Moderately suited Rock fragments Slope	0.50 0.50	Well suited	
<b>HhmBc:</b>							
Hibernia, extremely stony-----	80	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments	0.75	Moderately suited Stoniness Low strength	0.50 0.50
<b>HkrgBb:</b>							
Hinckley, very stony	85	Moderately suited Sand content Rock fragments	0.50 0.50	Unsuited Rock fragments Sand content Slope	1.00 0.50 0.50	Moderately suited Sand content	0.50

Table 11.—Forestland Planting and Harvesting—Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
HkrgCb:							
Hinckley, very stony	85	Moderately suited		Unsuited		Moderately suited	
		Sand content	0.50	Rock fragments	1.00	Sand content	0.50
		Rock fragments	0.50	Slope	0.50		
				Sand content	0.50		
HncD:							
Hollis-----	45	Poorly suited		Unsuited		Poorly suited	
		Rock fragments	0.75	Rock fragments	1.00	Stoniness	1.00
				Slope	0.75	Slope	0.50
Rock outcrop-----	30	Not rated		Not rated		Not rated	
Chatfield-----	20	Poorly suited		Unsuited		Poorly suited	
		Rock fragments	0.75	Rock fragments	1.00	Stoniness	1.00
				Slope	0.75	Low strength	0.50
						Slope	0.50
HonCb:							
Hoosic, very stony--	60	Moderately suited		Moderately suited		Well suited	
		Rock fragments	0.50	Rock fragments	0.50		
				Slope	0.50		
Hazen, very stony---	30	Well suited		Moderately suited		Moderately suited	
				Slope	0.50	Low strength	0.50
				Rock fragments	0.50		
HopEb:							
Hoosic, very stony--	50	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	0.50		
Otisville, very stony-----	40	Moderately suited		Unsuited		Poorly suited	
		Sand content	0.50	Slope	1.00	Slope	1.00
		Slope	0.50	Rock fragments	0.50	Sand content	0.50
				Sand content	0.50		
LacBc:							
Lackawanna, extremely stony----	85	Moderately suited		Poorly suited		Moderately suited	
		Rock fragments	0.50	Rock fragments	0.75	Stoniness	0.50
						Low strength	0.50
LacCc:							
Lackawanna, extremely stony----	85	Moderately suited		Poorly suited		Moderately suited	
		Rock fragments	0.50	Rock fragments	0.75	Stoniness	0.50
				Slope	0.50	Low strength	0.50
LacDc:							
Lackawanna, extremely stony----	85	Moderately suited		Poorly suited		Moderately suited	
		Rock fragments	0.50	Slope	0.75	Stoniness	0.50
				Rock fragments	0.75	Low strength	0.50
						Slope	0.50



Table 11.—Forestland Planting and Harvesting—Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
LorB:							
Lordstown-----	50	Well suited		Moderately suited Rock fragments	0.50	Well suited	
Wallpack-----	35	Well suited		Well suited		Moderately suited Low strength	0.50
LorC:							
Lordstown-----	50	Well suited		Moderately suited Rock fragments Slope	0.50 0.50	Well suited	
Wallpack-----	35	Well suited		Moderately suited Slope	0.50	Moderately suited Low strength	0.50
LorCh:							
Lordstown, very rocky-----	50	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments Slope	0.75 0.50	Moderately suited Stoniness	0.50
Wallpack, very rocky	35	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments Slope	0.75 0.50	Moderately suited Stoniness Low strength	0.50 0.50
LorD:							
Lordstown-----	50	Well suited		Poorly suited Slope Rock fragments	0.75 0.50	Moderately suited Slope	0.50
Wallpack-----	35	Well suited		Poorly suited Slope	0.75	Moderately suited Low strength Slope	0.50 0.50
LorDh:							
Lordstown, very rocky-----	50	Moderately suited Rock fragments	0.50	Poorly suited Slope Rock fragments	0.75 0.75	Moderately suited Stoniness Slope	0.50 0.50
Wallpack, very rocky	40	Moderately suited Rock fragments	0.50	Poorly suited Slope Rock fragments	0.75 0.75	Moderately suited Stoniness Low strength Slope	0.50 0.50 0.50
MabEh:							
Manlius, very rocky-	60	Moderately suited Slope Rock fragments	0.50 0.50	Unsuited Slope Rock fragments	1.00 1.00	Poorly suited Slope Stoniness	1.00 0.50
Nassau, very rocky--	25	Moderately suited Slope Rock fragments	0.50 0.50	Unsuited Slope Rock fragments	1.00 1.00	Poorly suited Slope Stoniness	1.00 0.50
NauBh:							
Nassau, very rocky--	50	Moderately suited Rock fragments	0.50	Unsuited Rock fragments	1.00	Moderately suited Stoniness Low strength	0.50 0.50
Manlius, very rocky-	45	Moderately suited Rock fragments	0.50	Unsuited Rock fragments	1.00	Moderately suited Stoniness Low strength	0.50 0.50

Table 11.—Forestland Planting and Harvesting—Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
NauCh:							
Nassau, very rocky--	55	Moderately suited Rock fragments	0.50	Unsuited Rock fragments Slope	1.00 0.50	Moderately suited Stoniness Low strength	0.50 0.50
Manlius, very rocky--	40	Moderately suited Rock fragments	0.50	Unsuited Rock fragments Slope	1.00 0.50	Moderately suited Stoniness Low strength	0.50 0.50
NauDh:							
Nassau, very rocky--	50	Moderately suited Rock fragments	0.50	Unsuited Rock fragments Slope	1.00 0.75	Moderately suited Stoniness Low strength Slope	0.50 0.50 0.50
Manlius, very rocky--	40	Moderately suited Rock fragments	0.50	Unsuited Rock fragments Slope	1.00 0.75	Moderately suited Stoniness Low strength Slope	0.50 0.50 0.50
NavE:							
Nassau-----	50	Moderately suited Slope Rock fragments	0.50 0.50	Unsuited Slope Rock fragments	1.00 1.00	Poorly suited Slope Stoniness	1.00 0.50
Rock outcrop-----	45	Not rated		Not rated		Not rated	
OpnCh:							
Oquaga, very rocky--	55	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments Slope	0.75 0.50	Moderately suited Stoniness	0.50
Lackawanna, very rocky-----	30	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments Slope	0.75 0.50	Moderately suited Stoniness Low strength	0.50 0.50
OpnDh:							
Oquaga, very rocky--	50	Moderately suited Rock fragments	0.50	Poorly suited Slope Rock fragments	0.75 0.75	Moderately suited Stoniness Slope	0.50 0.50
Lackawanna, very rocky-----	35	Moderately suited Rock fragments	0.50	Poorly suited Slope Rock fragments	0.75 0.75	Moderately suited Stoniness Low strength Slope	0.50 0.50 0.50
OprC:							
Oquaga-----	75	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments Slope	0.75 0.50	Moderately suited Stoniness	0.50
Rock outcrop-----	15	Not rated		Not rated		Not rated	
OprE:							
Oquaga-----	60	Moderately suited Slope Rock fragments	0.50 0.50	Unsuited Slope Rock fragments	1.00 0.75	Poorly suited Slope Stoniness	1.00 0.50

Table 11.—Forestland Planting and Harvesting—Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
OprE: (cont.)							
Rock outcrop-----	25	Not rated		Not rated		Not rated	
PHG:							
Pits, sand and gravel-----	95	Not rated		Not rated		Not rated	
PohA:							
Pompton-----	80	Well suited		Well suited		Well suited	
QY:							
Pits, quarry-----	100	Not rated		Not rated		Not rated	
RkrB:							
Riverhead-----	85	Well suited		Moderately suited Slope	0.50	Well suited	
RnaF:							
Rock outcrop-----	40	Not rated		Not rated		Not rated	
Arnot-----	30	Poorly suited Rock fragments Slope	0.75 0.50	Unsuited Slope Rock fragments	1.00 1.00	Poorly suited Slope Stoniness	1.00 1.00
Rubble land-----	20	Not rated		Not rated		Not rated	
RnfC:							
Rock outcrop-----	40	Not rated		Not rated		Not rated	
Farmington-----	35	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments Slope	0.75 0.50	Moderately suited Stoniness Low strength	0.50 0.50
Galway-----	25	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments Slope	0.75 0.50	Moderately suited Stoniness	0.50
RnfD:							
Rock outcrop-----	50	Not rated		Not rated		Not rated	
Farmington-----	40	Moderately suited Rock fragments	0.50	Poorly suited Slope Rock fragments	0.75 0.75	Moderately suited Stoniness Low strength Slope	0.50 0.50 0.50
Galway-----	10	Moderately suited Rock fragments	0.50	Poorly suited Slope Rock fragments	0.75 0.75	Moderately suited Stoniness Slope	0.50 0.50
RoefBc:							
Rockaway, thin fragipan, extremely stony-----	85	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments	0.75	Moderately suited Stoniness Low strength	0.50 0.50

Table 11.—Forestland Planting and Harvesting—Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting	Value	Suitability for mechanical planting	Value	Suitability for use of harvesting equipment	Value
		Rating class and limiting features		Rating class and limiting features		Rating class and limiting features	
RoefCc: Rockaway, thin fragipan, extremely stony-----	85	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments Slope	0.75 0.50	Moderately suited Stoniness Low strength	0.50 0.50
RoefDc: Rockaway, thin fragipan, extremely stony-----	85	Moderately suited Rock fragments	0.50	Poorly suited Slope Rock fragments	0.75 0.75	Moderately suited Stoniness Low strength Slope	0.50 0.50 0.50
RokB: Rockaway, thin fragipan-----	50	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments	0.75	Moderately suited Stoniness Low strength	0.50 0.50
Chatfield-----	30	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments	0.75	Moderately suited Stoniness Low strength	0.50 0.50
Rock outcrop-----	20	Not rated		Not rated		Not rated	
RokC: Rockaway, thin fragipan-----	45	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments Slope	0.75 0.50	Moderately suited Stoniness Low strength	0.50 0.50
Chatfield-----	40	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments Slope	0.75 0.50	Moderately suited Stoniness Low strength	0.50 0.50
Rock outcrop-----	15	Not rated		Not rated		Not rated	
RokD: Rockaway, thin fragipan-----	45	Moderately suited Rock fragments	0.50	Poorly suited Slope Rock fragments	0.75 0.75	Moderately suited Stoniness Low strength Slope	0.50 0.50 0.50
Chatfield-----	25	Moderately suited Rock fragments	0.50	Poorly suited Slope Rock fragments	0.75 0.75	Moderately suited Stoniness Low strength Slope	0.50 0.50 0.50
Rock outcrop-----	20	Not rated		Not rated		Not rated	
RooB: Rockaway, thin fragipan-----	50	Well suited		Well suited		Moderately suited Low strength	0.50
Urban land, Rockaway thin fragipan substratum-----	40	Not rated		Not rated		Not rated	

Table 11.—Forestland Planting and Harvesting—Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
RooC: Rockaway, thin fragipan-----	45	Well suited		Moderately suited Slope	0.50	Moderately suited Low strength	0.50
Urban land, Rockaway thin fragipan substratum-----	40	Not rated		Not rated		Not rated	
RooD: Rockaway, thin fragipan-----	45	Well suited		Poorly suited Slope	0.75	Moderately suited Low strength Slope	0.50 0.50
Urban land, Rockaway thin fragipan substratum-----	40	Not rated		Not rated		Not rated	
ScoA: Scio-----	80	Well suited		Well suited		Moderately suited Low strength	0.50
SwfBc: Swartswood, extremely stony----	90	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments	0.75	Moderately suited Stoniness	0.50
SwfCc: Swartswood, extremely stony----	90	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments Slope	0.75 0.50	Moderately suited Stoniness	0.50
SwfDc: Swartswood, extremely stony----	85	Moderately suited Rock fragments	0.50	Poorly suited Slope Rock fragments	0.75 0.75	Moderately suited Stoniness Slope	0.50 0.50
UccAs: Udifluvents, occasionally flooded-----	90	Well suited		Well suited		Well suited	
UdaB: Udorthents-----	100	Well suited		Well suited		Moderately suited Low strength	0.50
UdauB: Udorthents-----	60	Well suited		Well suited		Moderately suited Low strength	0.50
Urban land-----	40	Not rated		Not rated		Not rated	
UnfA: Unadilla-----	80	Well suited		Well suited		Moderately suited Low strength	0.50

Table 11.—Forestland Planting and Harvesting—Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
UnfB:							
Unadilla-----	80	Well suited		Moderately suited Slope	0.50	Moderately suited Low strength	0.50
USCHRB:							
Urban land, Chatfield substratum-----	40	Not rated		Not rated		Not rated	
Chatfield-----	25	Well suited		Moderately suited Rock fragments	0.50	Moderately suited Low strength	0.50
Rock outcrop-----	20	Not rated		Not rated		Not rated	
USCHRC:							
Urban land, Chatfield substratum-----	40	Not rated		Not rated		Not rated	
Chatfield-----	25	Well suited		Moderately suited Rock fragments Slope	0.50 0.50	Moderately suited Low strength	0.50
Rock outcrop-----	20	Not rated		Not rated		Not rated	
USCHRD:							
Urban land, Chatfield substratum-----	40	Not rated		Not rated		Not rated	
Chatfield-----	25	Well suited		Poorly suited Slope Rock fragments	0.75 0.50	Moderately suited Low strength Slope	0.50 0.50
Rock outcrop-----	20	Not rated		Not rated		Not rated	
USFARC:							
Urban land, Farmington substratum-----	50	Not rated		Not rated		Not rated	
Farmington-----	30	Well suited		Moderately suited Slope	0.50	Moderately suited Low strength	0.50
Rock outcrop-----	20	Not rated		Not rated		Not rated	
USFARD:							
Urban land, Farmington substratum-----	40	Not rated		Not rated		Not rated	
Farmington-----	35	Well suited		Poorly suited Slope	0.75	Moderately suited Low strength Slope	0.50 0.50
Rock outcrop-----	25	Not rated		Not rated		Not rated	

Table 11.—Forestland Planting and Harvesting—Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
USFAWB: Urban land, Farmington substratum-----	50	Not rated		Not rated		Not rated	
Farmington-----	30	Well suited		Well suited		Moderately suited Low strength	0.50
Wassaic-----	20	Moderately suited Stickiness; high plasticity index	0.50	Moderately suited Stickiness; high plasticity index	0.50	Moderately suited Low strength	0.50
USHAZA: Urban land, Hazen substratum-----	45	Not rated		Not rated		Not rated	
Hazen-----	35	Well suited		Well suited		Moderately suited Low strength	0.50
Hoosic-----	20	Moderately suited Rock fragments	0.50	Moderately suited Rock fragments	0.50	Well suited	
USHAZB: Urban land, Hazen substratum-----	55	Not rated		Not rated		Not rated	
Hazen-----	25	Well suited		Moderately suited Slope	0.50	Moderately suited Low strength	0.50
Hoosic-----	20	Moderately suited Rock fragments	0.50	Moderately suited Rock fragments Slope	0.50 0.50	Well suited	
USNAMB: Urban land, Nassau substratum-----	45	Not rated		Not rated		Not rated	
Nassau-----	30	Moderately suited Rock fragments	0.50	Unsuited Rock fragments	1.00	Moderately suited Low strength	0.50
Manlius-----	25	Moderately suited Rock fragments	0.50	Unsuited Rock fragments	1.00	Moderately suited Low strength	0.50
USNAMC: Urban land, Nassau substratum-----	55	Not rated		Not rated		Not rated	
Nassau-----	25	Moderately suited Rock fragments	0.50	Unsuited Rock fragments Slope	1.00 0.50	Moderately suited Low strength	0.50
Manlius-----	20	Moderately suited Rock fragments	0.50	Unsuited Rock fragments Slope	1.00 0.50	Moderately suited Low strength	0.50
USNAMD: Urban land, Nassau substratum-----	60	Not rated		Not rated		Not rated	

Table 11.—Forestland Planting and Harvesting—Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
USNAMD: (cont.)							
Nassau-----	25	Moderately suited Rock fragments	0.50	Unsuited Rock fragments Slope	1.00 0.75	Moderately suited Low strength Slope	0.50 0.50
Manlius-----	15	Moderately suited Rock fragments	0.50	Unsuited Rock fragments Slope	1.00 0.75	Moderately suited Low strength Slope	0.50 0.50
USWUSB:							
Urban land, Wurtsboro substratum-----	45	Not rated		Not rated		Not rated	
Wurtsboro-----	35	Well suited		Well suited		Well suited	
Swartswood-----	20	Well suited		Moderately suited Rock fragments	0.50	Well suited	
VepBc:							
Venango, extremely stony-----	90	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments	0.75	Moderately suited Stoniness Low strength	0.50 0.50
VepCc:							
Venango, extremely stony-----	85	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments Slope	0.75 0.50	Moderately suited Stoniness Low strength	0.50 0.50
WaahAt:							
Wallkill, frequently flooded-----	90	Moderately suited Stickiness; high plasticity index	0.50	Moderately suited Stickiness; high plasticity index	0.50	Poorly suited Low strength	1.00
WabBb:							
Wallpack, aeolian mantle, very stony-	85	Well suited		Moderately suited Rock fragments	0.50	Well suited	
WabCb:							
Wallpack, aeolian mantle, very stony-	85	Well suited		Moderately suited Slope Rock fragments	0.50 0.50	Well suited	
WabDb:							
Wallpack, aeolian mantle, very stony-	85	Well suited		Poorly suited Slope Rock fragments	0.75 0.50	Moderately suited Slope	0.50
WacB:							
Wallpack-----	85	Well suited		Well suited		Moderately suited Low strength	0.50



Table 11.—Forestland Planting and Harvesting—Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting	Value	Suitability for mechanical planting	Value	Suitability for use of harvesting equipment	Value
		Rating class and limiting features		Rating class and limiting features		Rating class and limiting features	
WacBc: Wallpack, extremely stony-----	85	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments	0.75	Moderately suited Stoniness Low strength	0.50 0.50
WacC: Wallpack-----	85	Well suited		Moderately suited Slope	0.50	Moderately suited Low strength	0.50
WacCc: Wallpack, extremely stony-----	85	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments Slope	0.75 0.50	Moderately suited Stoniness Low strength	0.50 0.50
WacD: Wallpack-----	85	Well suited		Poorly suited Slope	0.75	Moderately suited Low strength Slope	0.50 0.50
WacDc: Wallpack, extremely stony-----	85	Moderately suited Rock fragments	0.50	Poorly suited Slope Rock fragments	0.75 0.75	Moderately suited Stoniness Low strength Slope	0.50 0.50 0.50
WATER: Water-----	100	Not rated		Not rated		Not rated	
WecBc: Wellsboro, extremely stony-----	85	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments	0.75	Moderately suited Stoniness Low strength	0.50 0.50
WecCc: Wellsboro, extremely stony-----	85	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments Slope	0.75 0.50	Moderately suited Stoniness Low strength	0.50 0.50
WumBc: Wurtsboro, extremely stony-----	85	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments	0.75	Moderately suited Stoniness	0.50
WusBc: Wurtsboro, extremely stony-----	60	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments	0.75	Moderately suited Stoniness	0.50
Swartswood, extremely stony----	40	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments	0.75	Moderately suited Stoniness	0.50

Table 11.—Forestland Planting and Harvesting—Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
WusCc: Wurtsboro, extremely stony-----	60	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments Slope	0.75 0.50	Moderately suited Stoniness	0.50
Swartswood, extremely stony----	40	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments Slope	0.75 0.50	Moderately suited Stoniness	0.50
WusDc: Wurtsboro, extremely stony-----	80	Moderately suited Rock fragments	0.50	Poorly suited Slope Rock fragments	0.75 0.75	Moderately suited Stoniness Slope	0.50 0.50
Swartswood, extremely stony----	20	Moderately suited Rock fragments	0.50	Poorly suited Slope Rock fragments	0.75 0.75	Moderately suited Stoniness Slope	0.50 0.50

Table 12.—Forestland Site Preparation

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
AhbBc: Alden, extremely stony-----	90	Poorly suited Rock fragments	0.50	Poorly suited Rock fragments	0.50
AhcBc: Alden, gneiss till substratum, extremely stony----	90	Poorly suited Rock fragments	0.50	Poorly suited Rock fragments	0.50
AruCh: Arnot, very rocky---	55	Unsuited Rock fragments	1.00	Unsuited Restrictive layer Rock fragments	1.00 1.00
Lordstown, very rocky-----	40	Unsuited Rock fragments	1.00	Unsuited Rock fragments Restrictive layer	1.00 0.50
ArvD: Arnot-----	45	Unsuited Rock fragments Slope	1.00 0.50	Unsuited Restrictive layer Rock fragments Slope	1.00 1.00 0.50
Lordstown-----	40	Unsuited Rock fragments Slope	1.00 0.50	Unsuited Rock fragments Restrictive layer Slope	1.00 0.50 0.50
Rock outcrop-----	15	Not rated		Not rated	
ArvE: Arnot-----	60	Unsuited Slope Rock fragments	1.00 1.00	Unsuited Restrictive layer Slope Rock fragments	1.00 1.00 1.00
Lordstown-----	25	Unsuited Slope Rock fragments	1.00 1.00	Unsuited Slope Rock fragments Restrictive layer	1.00 1.00 0.50
Rock outcrop-----	15	Not rated		Not rated	
AtcA: Atherton, very poorly drained-----	60	Poorly suited Saturated zone	0.75	Unsuited Saturated zone	0.75
Atherton, poorly drained-----	30	Well suited		Well suited	

Table 12.—Forestland Site Preparation—Continued

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
CatbA: Catden-----	85	Well suited		Well suited	
ChkC: Chatfield-----	45	Unsuited Rock fragments	1.00	Unsuited Rock fragments Restrictive layer	1.00 0.50
Hollis-----	30	Unsuited Rock fragments	1.00	Unsuited Restrictive layer Rock fragments	1.00 1.00
Rock outcrop-----	25	Not rated		Not rated	
ChkE: Chatfield-----	45	Unsuited Slope Rock fragments	1.00 1.00	Unsuited Slope Rock fragments Restrictive layer	1.00 1.00 0.50
Hollis-----	30	Unsuited Slope Rock fragments	1.00 1.00	Unsuited Restrictive layer Slope Rock fragments	1.00 1.00 1.00
Rock outcrop-----	20	Not rated		Not rated	
ChwBc: Chippewa, extremely stony-----	80	Poorly suited Rock fragments	0.50	Poorly suited Rock fragments	0.50
CorA: Colonie-----	80	Well suited		Well suited	
CorB: Colonie-----	80	Well suited		Well suited	
DefAr: Delaware, rarely flooded-----	80	Well suited		Well suited	
DefBr: Delaware, rarely flooded-----	80	Well suited		Well suited	
FaxC: Farmington-----	50	Unsuited Rock fragments	1.00	Unsuited Rock fragments	1.00
Rock outcrop-----	40	Not rated		Not rated	
FdwB: Farmington-----	40	Poorly suited Rock fragments	0.50	Poorly suited Rock fragments	0.50
Wassaic-----	30	Poorly suited Rock fragments	0.50	Poorly suited Rock fragments	0.50
Rock outcrop-----	25	Not rated		Not rated	

Table 12.—Forestland Site Preparation—Continued

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
FmhAs: Fluvaquents, occasionally flooded-----	90	Well suited		Well suited	
FrdAb: Fredon, very stony--	45	Well suited		Well suited	
Halsey, very stony--	40	Well suited		Well suited	
GawEh: Galway, very rocky--	80	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	1.00	Rock fragments	1.00
HdxAb: Hazen, very stony---	50	Well suited		Poorly suited Rock fragments	0.50
Hoosic, very stony--	40	Poorly suited Rock fragments	0.50	Well suited	
HdxBb: Hazen, very stony---	60	Well suited		Poorly suited Rock fragments	0.50
Hoosic, very stony--	35	Poorly suited Rock fragments	0.50	Well suited	
HhmBc: Hibernia, extremely stony-----	80	Poorly suited Rock fragments	0.50	Poorly suited Rock fragments	0.50
HkrgBb: Hinckley, very stony	85	Poorly suited Rock fragments	0.50	Well suited	
HkrgCb: Hinckley, very stony	85	Poorly suited Rock fragments	0.50	Well suited	
HncD: Hollis-----	45	Unsuited		Unsuited	
		Rock fragments	1.00	Restrictive layer	1.00
		Slope	0.50	Rock fragments	1.00
				Slope	0.50
Rock outcrop-----	30	Not rated		Not rated	
Chatfield-----	20	Unsuited		Unsuited	
		Rock fragments	1.00	Rock fragments	1.00
		Slope	0.50	Restrictive layer	0.50
				Slope	0.50
HonCb: Hoosic, very stony--	60	Poorly suited Rock fragments	0.50	Well suited	
Hazen, very stony---	30	Well suited		Poorly suited Rock fragments	0.50

Table 12.—Forestland Site Preparation—Continued

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
HopEb:					
Hoosic, very stony---	50	Unsuited Slope Rock fragments	1.00 0.50	Unsuited Slope	1.00
Otisville, very stony-----	40	Unsuited Slope	1.00	Unsuited Slope	1.00
LacBc:					
Lackawanna, extremely stony----	85	Poorly suited Rock fragments	0.50	Poorly suited Rock fragments	0.50
LacCc:					
Lackawanna, extremely stony----	85	Poorly suited Rock fragments	0.50	Poorly suited Rock fragments	0.50
LacDc:					
Lackawanna, extremely stony----	85	Poorly suited Slope Rock fragments	0.50 0.50	Poorly suited Slope Rock fragments	0.50 0.50
LorB:					
Lordstown-----	50	Well suited		Well suited	
Wallpack-----	35	Well suited		Well suited	
LorC:					
Lordstown-----	50	Well suited		Well suited	
Wallpack-----	35	Well suited		Well suited	
LorCh:					
Lordstown, very rocky-----	50	Poorly suited Rock fragments	0.50	Poorly suited Rock fragments	0.50
Wallpack, very rocky	35	Poorly suited Rock fragments	0.50	Poorly suited Rock fragments	0.50
LorD:					
Lordstown-----	50	Poorly suited Slope	0.50	Poorly suited Slope	0.50
Wallpack-----	35	Poorly suited Slope	0.50	Poorly suited Slope	0.50
LorDh:					
Lordstown, very rocky-----	50	Poorly suited Slope Rock fragments	0.50 0.50	Poorly suited Slope Rock fragments	0.50 0.50
Wallpack, very rocky	40	Poorly suited Slope Rock fragments	0.50 0.50	Poorly suited Slope Rock fragments	0.50 0.50

Table 12.—Forestland Site Preparation—Continued

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
MabEh:					
Manlius, very rocky--	60	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	0.50
Nassau, very rocky--	25	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	0.50
NauBh:					
Nassau, very rocky--	50	Poorly suited		Poorly suited	
		Rock fragments	0.50	Rock fragments	0.50
Manlius, very rocky--	45	Poorly suited		Poorly suited	
		Rock fragments	0.50	Rock fragments	0.50
NauCh:					
Nassau, very rocky--	55	Poorly suited		Poorly suited	
		Rock fragments	0.50	Rock fragments	0.50
Manlius, very rocky--	40	Poorly suited		Poorly suited	
		Rock fragments	0.50	Rock fragments	0.50
NauDh:					
Nassau, very rocky--	50	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
		Rock fragments	0.50	Rock fragments	0.50
Manlius, very rocky--	40	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
		Rock fragments	0.50	Rock fragments	0.50
NavE:					
Nassau-----	50	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	0.50
Rock outcrop-----	45	Not rated		Not rated	
OpnCh:					
Oquaga, very rocky--	55	Poorly suited		Poorly suited	
		Rock fragments	0.50	Restrictive layer	0.50
				Rock fragments	0.50
Lackawanna, very rocky-----	30	Poorly suited		Poorly suited	
		Rock fragments	0.50	Rock fragments	0.50
OpnDh:					
Oquaga, very rocky--	50	Poorly suited		Poorly suited	
		Slope	0.50	Restrictive layer	0.50
		Rock fragments	0.50	Slope	0.50
				Rock fragments	0.50
Lackawanna, very rocky-----	35	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
		Rock fragments	0.50	Rock fragments	0.50

Table 12.—Forestland Site Preparation—Continued

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
OprC:					
Oquaga-----	75	Poorly suited Rock fragments	0.50	Poorly suited Restrictive layer Rock fragments	0.50 0.50
Rock outcrop-----	15	Not rated		Not rated	
OprE:					
Oquaga-----	60	Unsuited Slope Rock fragments	1.00 0.50	Unsuited Slope Restrictive layer Rock fragments	1.00 0.50 0.50
Rock outcrop-----	25	Not rated		Not rated	
PHG:					
Pits, sand and gravel-----	95	Not rated		Not rated	
PohA:					
Pompton-----	80	Well suited		Well suited	
QY:					
Pits, quarry-----	100	Not rated		Not rated	
RkrB:					
Riverhead-----	85	Well suited		Well suited	
RnaF:					
Rock outcrop-----	40	Not rated		Not rated	
Arnot-----	30	Unsuited Slope Rock fragments	1.00 1.00	Unsuited Slope Restrictive layer Rock fragments	1.00 1.00 1.00
Rubble land-----	20	Not rated		Not rated	
RnfC:					
Rock outcrop-----	40	Not rated		Not rated	
Farmington-----	35	Poorly suited Rock fragments	0.50	Poorly suited Rock fragments	0.50
Galway-----	25	Poorly suited Rock fragments	0.50	Poorly suited Rock fragments	0.50
RnfD:					
Rock outcrop-----	50	Not rated		Not rated	
Farmington-----	40	Poorly suited Slope Rock fragments	0.50 0.50	Poorly suited Slope Rock fragments	0.50 0.50
Galway-----	10	Poorly suited Slope Rock fragments	0.50 0.50	Poorly suited Slope Rock fragments	0.50 0.50



Table 12.—Forestland Site Preparation—Continued

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
RoefBc: Rockaway, thin fragipan, extremely stony-----	85	Poorly suited Rock fragments	0.50	Poorly suited Rock fragments	0.50
RoefCc: Rockaway, thin fragipan, extremely stony-----	85	Poorly suited Rock fragments	0.50	Poorly suited Rock fragments	0.50
RoefDc: Rockaway, thin fragipan, extremely stony-----	85	Poorly suited Slope Rock fragments	0.50 0.50	Poorly suited Slope Rock fragments	0.50 0.50
RokB: Rockaway, thin fragipan-----	50	Poorly suited Rock fragments	0.50	Poorly suited Rock fragments	0.50
Chatfield-----	30	Poorly suited Rock fragments	0.50	Poorly suited Restrictive layer Rock fragments	0.50 0.50
Rock outcrop-----	20	Not rated		Not rated	
RokC: Rockaway, thin fragipan-----	45	Poorly suited Rock fragments	0.50	Poorly suited Rock fragments	0.50
Chatfield-----	40	Poorly suited Rock fragments	0.50	Poorly suited Restrictive layer Rock fragments	0.50 0.50
Rock outcrop-----	15	Not rated		Not rated	
RokD: Rockaway, thin fragipan-----	45	Poorly suited Slope Rock fragments	0.50 0.50	Poorly suited Slope Rock fragments	0.50 0.50
Chatfield-----	25	Poorly suited Slope Rock fragments	0.50 0.50	Poorly suited Restrictive layer Slope Rock fragments	0.50 0.50 0.50
Rock outcrop-----	20	Not rated		Not rated	
RooB: Rockaway, thin fragipan-----	50	Well suited		Well suited	
Urban land, Rockaway thin fragipan substratum-----	40	Not rated		Not rated	

Table 12.—Forestland Site Preparation—Continued

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
RooC:					
Rockaway, thin fragipan-----	45	Well suited		Well suited	
Urban land, Rockaway thin fragipan substratum-----	40	Not rated		Not rated	
RooD:					
Rockaway, thin fragipan-----	45	Poorly suited Slope	0.50	Poorly suited Slope	0.50
Urban land, Rockaway thin fragipan substratum-----	40	Not rated		Not rated	
ScoA:					
Scio-----	80	Well suited		Well suited	
SwfBc:					
Swartswood, extremely stony----	90	Poorly suited Rock fragments	0.50	Poorly suited Rock fragments	0.50
SwfCc:					
Swartswood, extremely stony----	90	Poorly suited Rock fragments	0.50	Poorly suited Rock fragments	0.50
SwfDc:					
Swartswood, extremely stony----	85	Poorly suited Slope Rock fragments	0.50 0.50	Poorly suited Slope Rock fragments	0.50 0.50
UccAs:					
Udifluvents, occasionally flooded-----	90	Well suited		Well suited	
UdaB:					
Udorthents-----	100	Well suited		Well suited	
UdauB:					
Udorthents-----	60	Well suited		Well suited	
Urban land-----	40	Not rated		Not rated	
UnfA:					
Unadilla-----	80	Well suited		Well suited	
UnfB:					
Unadilla-----	80	Well suited		Well suited	
USCHRB:					
Urban land, Chatfield substratum-----	40	Not rated		Not rated	

Table 12.—Forestland Site Preparation—Continued

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
USCHRB: (cont.)					
Chatfield-----	25	Well suited		Poorly suited Restrictive layer	0.50
Rock outcrop-----	20	Not rated		Not rated	
USCHRC:					
Urban land, Chatfield substratum-----	40	Not rated		Not rated	
Chatfield-----	25	Well suited		Poorly suited Restrictive layer	0.50
Rock outcrop-----	20	Not rated		Not rated	
USCHRD:					
Urban land, Chatfield substratum-----	40	Not rated		Not rated	
Chatfield-----	25	Poorly suited Slope	0.50	Poorly suited Restrictive layer Slope	0.50 0.50
Rock outcrop-----	20	Not rated		Not rated	
USFARC:					
Urban land, Farmington substratum-----	50	Not rated		Not rated	
Farmington-----	30	Well suited		Well suited	
Rock outcrop-----	20	Not rated		Not rated	
USFARD:					
Urban land, Farmington substratum-----	40	Not rated		Not rated	
Farmington-----	35	Poorly suited Slope	0.50	Poorly suited Slope	0.50
Rock outcrop-----	25	Not rated		Not rated	
USFAWB:					
Urban land, Farmington substratum-----	50	Not rated		Not rated	
Farmington-----	30	Well suited		Well suited	
Wassaic-----	20	Well suited		Well suited	
USHAZA:					
Urban land, Hazen substratum-----	45	Not rated		Not rated	

Table 12.—Forestland Site Preparation—Continued

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
USHAZA: (cont.)					
Hazen-----	35	Well suited		Poorly suited Rock fragments	0.50
Hoosic-----	20	Poorly suited Rock fragments	0.50	Well suited	
USHAZB:					
Urban land, Hazen substratum-----	55	Not rated		Not rated	
Hazen-----	25	Well suited		Poorly suited Rock fragments	0.50
Hoosic-----	20	Poorly suited Rock fragments	0.50	Well suited	
USNAMB:					
Urban land, Nassau substratum-----	45	Not rated		Not rated	
Nassau-----	30	Poorly suited Rock fragments	0.50	Well suited	
Manlius-----	25	Poorly suited Rock fragments	0.50	Well suited	
USNAMC:					
Urban land, Nassau substratum-----	55	Not rated		Not rated	
Nassau-----	25	Poorly suited Rock fragments	0.50	Well suited	
Manlius-----	20	Poorly suited Rock fragments	0.50	Well suited	
USNAMD:					
Urban land, Nassau substratum-----	60	Not rated		Not rated	
Nassau-----	25	Poorly suited Slope Rock fragments	0.50 0.50	Poorly suited Slope	0.50
Manlius-----	15	Poorly suited Slope Rock fragments	0.50 0.50	Poorly suited Slope	0.50
USWUSB:					
Urban land, Wurtsboro substratum-----	45	Not rated		Not rated	
Wurtsboro-----	35	Well suited		Well suited	
Swartswood-----	20	Well suited		Well suited	

Table 12.—Forestland Site Preparation—Continued

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
VepBc: Venango, extremely stony-----	90	Poorly suited Rock fragments	0.50	Poorly suited Rock fragments	0.50
VepCc: Venango, extremely stony-----	85	Poorly suited Rock fragments	0.50	Poorly suited Rock fragments	0.50
WaahAt: Wallkill, frequently flooded-----	90	Well suited		Well suited	
WabBb: Wallpack, aeolian mantle, very stony-	85	Well suited		Well suited	
WabCb: Wallpack, aeolian mantle, very stony-	85	Well suited		Well suited	
WabDb: Wallpack, aeolian mantle, very stony-	85	Poorly suited Slope	0.50	Poorly suited Slope	0.50
WacB: Wallpack-----	85	Well suited		Well suited	
WacBc: Wallpack, extremely stony-----	85	Poorly suited Rock fragments	0.50	Poorly suited Rock fragments	0.50
WacC: Wallpack-----	85	Well suited		Well suited	
WacCc: Wallpack, extremely stony-----	85	Poorly suited Rock fragments	0.50	Poorly suited Rock fragments	0.50
WacD: Wallpack-----	85	Poorly suited Slope	0.50	Poorly suited Slope	0.50
WacDc: Wallpack, extremely stony-----	85	Poorly suited Slope Rock fragments	0.50 0.50	Poorly suited Slope Rock fragments	0.50 0.50
WATER: Water-----	100	Not rated		Not rated	
WecBc: Wellsboro, extremely stony-----	85	Poorly suited Rock fragments	0.50	Poorly suited Rock fragments	0.50

Table 12.—Forestland Site Preparation—Continued

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
WecCc: Wellsboro, extremely stony-----	85	Poorly suited Rock fragments	0.50	Poorly suited Rock fragments	0.50
WumBc: Wurtsboro, extremely stony-----	85	Poorly suited Rock fragments	0.50	Poorly suited Rock fragments	0.50
WusBc: Wurtsboro, extremely stony-----	60	Poorly suited Rock fragments	0.50	Poorly suited Rock fragments	0.50
Swartswood, extremely stony----	40	Poorly suited Rock fragments	0.50	Poorly suited Rock fragments	0.50
WusCc: Wurtsboro, extremely stony-----	60	Poorly suited Rock fragments	0.50	Poorly suited Rock fragments	0.50
Swartswood, extremely stony----	40	Poorly suited Rock fragments	0.50	Poorly suited Rock fragments	0.50
WusDc: Wurtsboro, extremely stony-----	80	Poorly suited Slope Rock fragments	0.50 0.50	Poorly suited Slope Rock fragments	0.50 0.50
Swartswood, extremely stony----	20	Poorly suited Slope Rock fragments	0.50 0.50	Poorly suited Slope Rock fragments	0.50 0.50

Table 13.—Damage by Fire and Seedling Mortality on Forestland

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
AhbBc: Alden, extremely stony-----	90	Low Texture/rock fragments	0.10	High Saturated zone	1.00
AhcBc: Alden, gneiss till substratum, extremely stony----	90	Low Texture/rock fragments	0.10	High Saturated zone	1.00
AruCh: Arnot, very rocky---	55	Low Texture/surface depth/rock fragments	0.10	Low	
Lordstown, very rocky-----	40	Low Texture/surface depth/rock fragments	0.10	Low	
ArvD: Arnot-----	45	Low Texture/surface depth/rock fragments	0.10	Low	
Lordstown-----	40	Low Texture/surface depth/rock fragments	0.10	Low	
Rock outcrop-----	15	Not rated		Not rated	
ArvE: Arnot-----	60	Moderate Texture/slope/sur face depth/rock fragments	0.50	Low	
Lordstown-----	25	Moderate Texture/slope/sur face depth/rock fragments	0.50	Low	
Rock outcrop-----	15	Not rated		Not rated	

Table 13.—Damage by Fire and Seedling Mortality on Forestland—Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
AtcA: Atherton, very poorly drained-----	60	Low Texture/surface depth/rock fragments	0.10	High Saturated zone	1.00
Atherton, poorly drained-----	30	Low Texture/rock fragments	0.10	High Saturated zone	1.00
CatbA: Catden-----	85	Low		High Saturated zone	1.00
ChkC: Chatfield-----	45	Low Texture/surface depth/rock fragments	0.10	Low	
Hollis-----	30	Low Texture/surface depth/rock fragments	0.10	Low	
Rock outcrop-----	25	Not rated		Not rated	
ChkE: Chatfield-----	45	Moderate Texture/slope/sur face depth/rock fragments	0.50	Low	
Hollis-----	30	Moderate Texture/slope/sur face depth/rock fragments	0.50	Low	
Rock outcrop-----	20	Not rated		Not rated	
ChwBc: Chippewa, extremely stony-----	80	Low Texture/surface depth/rock fragments	0.10	High Saturated zone	1.00
CorA: Colonie-----	80	High Texture/surface depth/rock fragments	1.00	Low	
CorB: Colonie-----	80	High Texture/surface depth/rock fragments	1.00	Low	



Table 13.—Damage by Fire and Seedling Mortality on Forestland—Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
DefAr: Delaware, rarely flooded-----	80	Low Texture/surface depth/rock fragments	0.10	Low	
DefBr: Delaware, rarely flooded-----	80	Low Texture/surface depth/rock fragments	0.10	Low	
FaxC: Farmington-----	50	Low Texture/surface depth/rock fragments	0.10	Low	
Rock outcrop-----	40	Not rated		Not rated	
FdwB: Farmington-----	40	Low Texture/surface depth/rock fragments	0.10	Low	
Wassaic-----	30	Low Texture/surface depth/rock fragments	0.10	Low	
Rock outcrop-----	25	Not rated		Not rated	
FmhAs: Fluvaquents, occasionally flooded-----	90	Low Texture/rock fragments	0.10	High Saturated zone	1.00
FrdAb: Fredon, very stony--	45	Low Texture/rock fragments	0.10	High Saturated zone	1.00
Halsey, very stony--	40	Low Texture/surface depth/rock fragments	0.10	High Saturated zone	1.00
GawEh: Galway, very rocky--	80	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
HdxAb: Hazen, very stony---	50	Low Texture/rock fragments	0.10	Low	

Table 13.—Damage by Fire and Seedling Mortality on Forestland—Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
HdxAb: (cont.)					
Hoosic, very stony--	40	Low Texture/rock fragments	0.10	Low	
HdxBb:					
Hazen, very stony---	60	Low Texture/rock fragments	0.10	Low	
Hoosic, very stony--	35	Low Texture/rock fragments	0.10	Low	
HhmBc:					
Hibernia, extremely stony-----	80	Low Texture/surface depth/rock fragments	0.10	High Saturated zone	1.00
HkrgBb:					
Hinckley, very stony	85	Moderate Texture/surface depth/rock fragments	0.50	Low	
HkrgCb:					
Hinckley, very stony	85	Moderate Texture/surface depth/rock fragments	0.50	Low	
HncD:					
Hollis-----	45	Low Texture/surface depth/rock fragments	0.10	Low	
Rock outcrop-----	30	Not rated		Not rated	
Chatfield-----	20	Low Texture/surface depth/rock fragments	0.10	Low	
HonCb:					
Hoosic, very stony--	60	Low Texture/rock fragments	0.10	Low	
Hazen, very stony---	30	Low Texture/rock fragments	0.10	Low	
HopEb:					
Hoosic, very stony--	50	Low Texture/slope/ rock fragments	0.10	Low	

Table 13.—Damage by Fire and Seedling Mortality on Forestland—Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
HopEb: (cont.) Otisville, very stony-----	40	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
LacBc: Lackawanna, extremely stony----	85	Low Texture/surface depth/rock fragments	0.10	Moderate Soil reaction	0.50
LacCc: Lackawanna, extremely stony----	85	Low Texture/surface depth/rock fragments	0.10	Moderate Soil reaction	0.50
LacDc: Lackawanna, extremely stony----	85	Low Texture/surface depth/rock fragments	0.10	Moderate Soil reaction	0.50
LorB: Lordstown-----	50	Low Texture/surface depth/rock fragments	0.10	Low	
Wallpack-----	35	Low Texture/surface depth/rock fragments	0.10	Low	
LorC: Lordstown-----	50	Low Texture/surface depth/rock fragments	0.10	Low	
Wallpack-----	35	Low Texture/surface depth/rock fragments	0.10	Low	
LorCh: Lordstown, very rocky-----	50	Low Texture/surface depth/rock fragments	0.10	Low	
Wallpack, very rocky	35	Low Texture/surface depth/rock fragments	0.10	Low	

Table 13.—Damage by Fire and Seedling Mortality on Forestland—Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
LorD:					
Lordstown-----	50	Low Texture/surface depth/rock fragments	0.10	Low	
Wallpack-----	35	Low Texture/surface depth/rock fragments	0.10	Low	
LorDh:					
Lordstown, very rocky-----	50	Low Texture/surface depth/rock fragments	0.10	Low	
Wallpack, very rocky	40	Low Texture/surface depth/rock fragments	0.10	Low	
MabEh:					
Manlius, very rocky-	60	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
Nassau, very rocky--	25	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
NauBh:					
Nassau, very rocky--	50	Low Texture/rock fragments	0.10	Low	
Manlius, very rocky-	45	Low Texture/rock fragments	0.10	Low	
NauCh:					
Nassau, very rocky--	55	Low Texture/rock fragments	0.10	Low	
Manlius, very rocky-	40	Low Texture/rock fragments	0.10	Low	
NauDh:					
Nassau, very rocky--	50	Low Texture/rock fragments	0.10	Low	
Manlius, very rocky-	40	Low Texture/rock fragments	0.10	Low	

Table 13.—Damage by Fire and Seedling Mortality on Forestland—Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
NavE: Nassau-----	50	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
Rock outcrop-----	45	Not rated		Not rated	
OpnCh: Oquaga, very rocky--	55	Low Texture/surface depth/rock fragments	0.10	Low	
Lackawanna, very rocky-----	30	Low Texture/surface depth/rock fragments	0.10	Moderate Soil reaction	0.50
OpnDh: Oquaga, very rocky--	50	Low Texture/surface depth/rock fragments	0.10	Low	
Lackawanna, very rocky-----	35	Low Texture/surface depth/rock fragments	0.10	Moderate Soil reaction	0.50
OprC: Oquaga-----	75	Low Texture/surface depth/rock fragments	0.10	Low	
Rock outcrop-----	15	Not rated		Not rated	
OprE: Oquaga-----	60	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
Rock outcrop-----	25	Not rated		Not rated	
PHG: Pits, sand and gravel-----	95	Not rated		Not rated	
PohA: Pompton-----	80	Low Texture/surface depth/rock fragments	0.10	High Saturated zone	1.00

Table 13.—Damage by Fire and Seedling Mortality on Forestland—Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
QY:					
Pits, quarry-----	100	Not rated		Not rated	
RkrB:					
Riverhead-----	85	Moderate Texture/rock fragments	0.50	Low	
RnaF:					
Rock outcrop-----	40	Not rated		Not rated	
Arnot-----	30	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
Rubble land-----	20	Not rated		Not rated	
RnfC:					
Rock outcrop-----	40	Not rated		Not rated	
Farmington-----	35	Low Texture/surface depth/rock fragments	0.10	Low	
Galway-----	25	Low Texture/surface depth/rock fragments	0.10	Low	
RnfD:					
Rock outcrop-----	50	Not rated		Not rated	
Farmington-----	40	Low Texture/surface depth/rock fragments	0.10	Low	
Galway-----	10	Low Texture/surface depth/rock fragments	0.10	Low	
RoefBc:					
Rockaway, thin fragipan, extremely stony-----	85	Low Texture/surface depth/rock fragments	0.10	Low	
RoefCc:					
Rockaway, thin fragipan, extremely stony-----	85	Low Texture/surface depth/rock fragments	0.10	Low	

Table 13.—Damage by Fire and Seedling Mortality on Forestland—Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
RoefDc: Rockaway, thin fragipan, extremely stony-----	85	Low Texture/surface depth/rock fragments	0.10	Low	
RokB: Rockaway, thin fragipan-----	50	Low Texture/surface depth/rock fragments	0.10	Low	
Chatfield-----	30	Low Texture/surface depth/rock fragments	0.10	Low	
Rock outcrop-----	20	Not rated		Not rated	
RokC: Rockaway, thin fragipan-----	45	Low Texture/surface depth/rock fragments	0.10	Low	
Chatfield-----	40	Low Texture/surface depth/rock fragments	0.10	Low	
Rock outcrop-----	15	Not rated		Not rated	
RokD: Rockaway, thin fragipan-----	45	Low Texture/surface depth/rock fragments	0.10	Low	
Chatfield-----	25	Low Texture/surface depth/rock fragments	0.10	Low	
Rock outcrop-----	20	Not rated		Not rated	
RooB: Rockaway, thin fragipan-----	50	Low Texture/surface depth/rock fragments	0.10	Low	
Urban land, Rockaway thin fragipan substratum-----	40	Not rated		Not rated	

Table 13.—Damage by Fire and Seedling Mortality on Forestland—Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
RooC: Rockaway, thin fragipan-----	45	Low Texture/surface depth/rock fragments	0.10	Low	
Urban land, Rockaway thin fragipan substratum-----	40	Not rated		Not rated	
RooD: Rockaway, thin fragipan-----	45	Low Texture/surface depth/rock fragments	0.10	Low	
Urban land, Rockaway thin fragipan substratum-----	40	Not rated		Not rated	
ScoA: Scio-----	80	Low Texture/rock fragments	0.10	Low	
SwfBc: Swartswood, extremely stony----	90	Low Texture/surface depth/rock fragments	0.10	Low	
SwfCc: Swartswood, extremely stony----	90	Low Texture/surface depth/rock fragments	0.10	Low	
SwfDc: Swartswood, extremely stony----	85	Low Texture/surface depth/rock fragments	0.10	Low	
UccAs: Udifluvents, occasionally flooded-----	90	Moderate Texture/surface depth/rock fragments	0.50	Low	
UdaB: Udorthents-----	100	Low Texture/rock fragments	0.10	Low	



Table 13.—Damage by Fire and Seedling Mortality on Forestland—Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
UdauB:					
Udorthents-----	60	Low Texture/rock fragments	0.10	Low	
Urban land-----	40	Not rated		Not rated	
UnfA:					
Unadilla-----	80	Low Texture/rock fragments	0.10	Low	
UnfB:					
Unadilla-----	80	Low Texture/rock fragments	0.10	Low	
USCHRB:					
Urban land, Chatfield substratum-----	40	Not rated		Not rated	
Chatfield-----	25	Low Texture/surface depth/rock fragments	0.10	Low	
Rock outcrop-----	20	Not rated		Not rated	
USCHRC:					
Urban land, Chatfield substratum-----	40	Not rated		Not rated	
Chatfield-----	25	Low Texture/surface depth/rock fragments	0.10	Low	
Rock outcrop-----	20	Not rated		Not rated	
USCHRD:					
Urban land, Chatfield substratum-----	40	Not rated		Not rated	
Chatfield-----	25	Low Texture/surface depth/rock fragments	0.10	Low	
Rock outcrop-----	20	Not rated		Not rated	
USFARC:					
Urban land, Farmington substratum-----	50	Not rated		Not rated	

Table 13.—Damage by Fire and Seedling Mortality on Forestland—Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
USFARC: (cont.)					
Farmington-----	30	Low Texture/surface depth/rock fragments	0.10	Low	
Rock outcrop-----	20	Not rated		Not rated	
USFARD:					
Urban land, Farmington substratum-----	40	Not rated		Not rated	
Farmington-----	35	Low Texture/surface depth/rock fragments	0.10	Low	
Rock outcrop-----	25	Not rated		Not rated	
USFAWB:					
Urban land, Farmington substratum-----	50	Not rated		Not rated	
Farmington-----	30	Low Texture/surface depth/rock fragments	0.10	Low	
Wassaic-----	20	Low Texture/surface depth/rock fragments	0.10	Low	
USHAZA:					
Urban land, Hazen substratum-----	45	Not rated		Not rated	
Hazen-----	35	Low Texture/rock fragments	0.10	Low	
Hoosic-----	20	Low Texture/rock fragments	0.10	Low	
USHAZB:					
Urban land, Hazen substratum-----	55	Not rated		Not rated	
Hazen-----	25	Low Texture/rock fragments	0.10	Low	
Hoosic-----	20	Low Texture/rock fragments	0.10	Low	

Table 13.—Damage by Fire and Seedling Mortality on Forestland—Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
USNAMB:					
Urban land, Nassau substratum-----	45	Not rated		Not rated	
Nassau-----	30	Low Texture/rock fragments	0.10	Low	
Manlius-----	25	Low Texture/rock fragments	0.10	Low	
USNAMC:					
Urban land, Nassau substratum-----	55	Not rated		Not rated	
Nassau-----	25	Low Texture/rock fragments	0.10	Low	
Manlius-----	20	Low Texture/rock fragments	0.10	Low	
USNAMD:					
Urban land, Nassau substratum-----	60	Not rated		Not rated	
Nassau-----	25	Low Texture/rock fragments	0.10	Low	
Manlius-----	15	Low Texture/rock fragments	0.10	Low	
USWUSB:					
Urban land, Wurtsboro substratum-----	45	Not rated		Not rated	
Wurtsboro-----	35	Low Texture/surface depth/rock fragments	0.10	High Saturated zone	1.00
Swartswood-----	20	Low Texture/surface depth/rock fragments	0.10	Low	
VepBc:					
Venango, extremely stony-----	90	Low Texture/rock fragments	0.10	High Saturated zone	1.00
VepCc:					
Venango, extremely stony-----	85	Low Texture/rock fragments	0.10	High Saturated zone	1.00

Table 13.—Damage by Fire and Seedling Mortality on Forestland—Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
WaahAt: Wallkill, frequently flooded-----	90	Low Texture/rock fragments	0.10	High Saturated zone	1.00
WabBb: Wallpack, aeolian mantle, very stony-	85	Low Texture/surface depth/rock fragments	0.10	Low	
WabCb: Wallpack, aeolian mantle, very stony-	85	Low Texture/surface depth/rock fragments	0.10	Low	
WabDb: Wallpack, aeolian mantle, very stony-	85	Low Texture/surface depth/rock fragments	0.10	Low	
WacB: Wallpack-----	85	Low Texture/surface depth/rock fragments	0.10	Low	
WacBc: Wallpack, extremely stony-----	85	Low Texture/surface depth/rock fragments	0.10	Low	
WacC: Wallpack-----	85	Low Texture/surface depth/rock fragments	0.10	Low	
WacCc: Wallpack, extremely stony-----	85	Low Texture/surface depth/rock fragments	0.10	Low	
WacD: Wallpack-----	85	Low Texture/surface depth/rock fragments	0.10	Low	

Table 13.—Damage by Fire and Seedling Mortality on Forestland—Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
WacDc: Wallpack, extremely stony-----	85	Low Texture/surface depth/rock fragments	0.10	Low	
WATER: Water-----	100	Not rated		Not rated	
WecBc: Wellsboro, extremely stony-----	85	Low Texture/rock fragments	0.10	Low	
WecCc: Wellsboro, extremely stony-----	85	Low Texture/rock fragments	0.10	Low	
WumBc: Wurtsboro, extremely stony-----	85	Low Texture/surface depth/rock fragments	0.10	High Saturated zone	1.00
WusBc: Wurtsboro, extremely stony-----	60	Low Texture/surface depth/rock fragments	0.10	High Saturated zone	1.00
Swartswood, extremely stony----	40	Low Texture/surface depth/rock fragments	0.10	Low	
WusCc: Wurtsboro, extremely stony-----	60	Low Texture/surface depth/rock fragments	0.10	High Saturated zone	1.00
Swartswood, extremely stony----	40	Low Texture/surface depth/rock fragments	0.10	Low	
WusDc: Wurtsboro, extremely stony-----	80	Low Texture/surface depth/rock fragments	0.10	High Saturated zone	1.00

Table 13.—Damage by Fire and Seedling Mortality on Forestland—Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
WusDc: (cont.) Swartswood, extremely stony----	20	Low Texture/surface depth/rock fragments	0.10	Low	

Table 14.—Camp Areas, Picnic Areas, and Playgrounds

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
AhbBc: Alden, extremely stony-----	90	Very limited Saturated zone Ponding Stoniness Permeability	 1.00 1.00 1.00 0.26	Very limited Stoniness Ponding Saturated zone Permeability	 1.00 1.00 1.00 0.26	Very limited Stoniness Saturated zone Ponding Permeability	 1.00 1.00 1.00 0.26
AhcBc: Alden, gneiss till substratum, extremely stony----	90	Very limited Saturated zone Ponding Stoniness Permeability	 1.00 1.00 1.00 0.26	Very limited Stoniness Ponding Saturated zone Permeability	 1.00 1.00 1.00 0.26	Very limited Stoniness Saturated zone Ponding Permeability	 1.00 1.00 1.00 0.26
AruCh: Arnot, very rocky---	55	Very limited Stoniness Depth to bedrock Slope	 1.00 1.00 0.01	Very limited Stoniness Depth to bedrock Slope	 1.00 1.00 0.01	Very limited Stoniness Slope Depth to bedrock	 1.00 1.00 1.00
Lordstown, very rocky-----	40	Very limited Stoniness Slope	 1.00 0.01	Very limited Stoniness Slope	 1.00 0.01	Very limited Stoniness Slope Depth to bedrock	 1.00 1.00 0.06
ArvD: Arnot-----	45	Very limited Slope Stoniness Depth to bedrock	 1.00 1.00 1.00	Very limited Stoniness Slope Depth to bedrock	 1.00 1.00 1.00	Very limited Stoniness Slope Depth to bedrock	 1.00 1.00 1.00
Lordstown-----	40	Very limited Slope Stoniness	 1.00 1.00	Very limited Stoniness Slope	 1.00 1.00	Very limited Stoniness Slope Depth to bedrock	 1.00 1.00 0.06
Rock outcrop-----	15	Not rated		Not rated		Not rated	
ArvE: Arnot-----	60	Very limited Slope Stoniness Depth to bedrock	 1.00 1.00 1.00	Very limited Stoniness Slope Depth to bedrock	 1.00 1.00 1.00	Very limited Stoniness Slope Depth to bedrock	 1.00 1.00 1.00
Lordstown-----	25	Very limited Slope Stoniness	 1.00 1.00	Very limited Stoniness Slope	 1.00 1.00	Very limited Stoniness Slope Depth to bedrock	 1.00 1.00 0.06
Rock outcrop-----	15	Not rated		Not rated		Not rated	

Table 14.—Camp Areas, Picnic Areas, and Playgrounds—Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
AtcA:							
Atherton, very poorly drained-----	60	Very limited		Very limited		Very limited	
		Saturated zone	1.00	Ponding	1.00	Saturated zone	1.00
		Ponding	1.00	Saturated zone	1.00	Ponding	1.00
Atherton, poorly drained-----	30	Very limited		Very limited		Very limited	
		Saturated zone	1.00	Saturated zone	1.00	Saturated zone	1.00
CatbA:							
Catden-----	85	Very limited		Very limited		Very limited	
		Saturated zone	1.00	Ponding	1.00	Saturated zone	1.00
		Ponding	1.00	Saturated zone	1.00	Ponding	1.00
ChkC:							
Chatfield-----	45	Very limited		Very limited		Very limited	
		Stoniness	1.00	Stoniness	1.00	Stoniness	1.00
		Slope	0.01	Slope	0.01	Slope	1.00
						Depth to bedrock	0.46
Hollis-----	30	Very limited		Very limited		Very limited	
		Stoniness	1.00	Stoniness	1.00	Stoniness	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Slope	0.01	Slope	0.01	Depth to bedrock	1.00
Rock outcrop-----	25	Not rated		Not rated		Not rated	
ChkE:							
Chatfield-----	45	Very limited		Very limited		Very limited	
		Slope	1.00	Stoniness	1.00	Stoniness	1.00
		Stoniness	1.00	Slope	1.00	Slope	1.00
						Depth to bedrock	0.46
Hollis-----	30	Very limited		Very limited		Very limited	
		Slope	1.00	Stoniness	1.00	Stoniness	1.00
		Stoniness	1.00	Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
Rock outcrop-----	20	Not rated		Not rated		Not rated	
ChwBc:							
Chippewa, extremely stony-----	80	Very limited		Very limited		Very limited	
		Saturated zone	1.00	Stoniness	1.00	Stoniness	1.00
		Ponding	1.00	Ponding	1.00	Saturated zone	1.00
		Stoniness	1.00	Saturated zone	1.00	Ponding	1.00
CorA:							
Colonie-----	80	Somewhat limited		Somewhat limited		Somewhat limited	
		Sand content	0.19	Sand content	0.19	Sand content	0.19
CorB:							
Colonie-----	80	Somewhat limited		Somewhat limited		Very limited	
		Sand content	0.19	Sand content	0.19	Slope	1.00
						Sand content	0.19



Table 14.—Camp Areas, Picnic Areas, and Playgrounds—Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
DefAr: Delaware, rarely flooded-----	80	Very limited Flooding	1.00	Not limited		Not limited	
DefBr: Delaware, rarely flooded-----	80	Very limited Flooding	1.00	Not limited		Very limited Slope	1.00
FaxC: Farmington-----	50	Very limited Stoniness	1.00	Very limited Stoniness	1.00	Very limited Stoniness	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Slope	0.01	Slope	0.01	Depth to bedrock	1.00
Rock outcrop-----	40	Not rated		Not rated		Not rated	
FdwB: Farmington-----	40	Very limited Stoniness	1.00	Very limited Stoniness	1.00	Very limited Stoniness	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
						Slope	0.50
Wassaic-----	30	Very limited Stoniness	1.00	Very limited Stoniness	1.00	Very limited Stoniness	1.00
						Depth to bedrock	0.65
						Slope	0.50
Rock outcrop-----	25	Not rated		Not rated		Not rated	
FmhAs: Fluvaquents, occasionally flooded-----	90	Very limited Saturated zone Flooding	1.00 1.00	Very limited Saturated zone	1.00	Very limited Saturated zone Flooding	1.00 0.60
FrdAb: Fredon, very stony--	45	Very limited Saturated zone Stoniness	1.00 0.19	Somewhat limited Saturated zone Stoniness	0.96 0.19	Very limited Saturated zone Stoniness	1.00 0.19
Halsey, very stony--	40	Very limited Saturated zone Ponding Stoniness	1.00 1.00 0.19	Very limited Ponding Saturated zone Stoniness	1.00 1.00 0.19	Very limited Saturated zone Ponding Stoniness	1.00 1.00 0.19
GawEh: Galway, very rocky--	80	Very limited Slope Stoniness	1.00 1.00	Very limited Stoniness Slope	1.00 1.00	Very limited Stoniness Slope Depth to bedrock	1.00 1.00 0.90
HdxAb: Hazen, very stony---	50	Somewhat limited Stoniness	0.19	Somewhat limited Stoniness	0.19	Somewhat limited Stoniness	0.19
Hoosic, very stony--	40	Somewhat limited Stoniness	0.19	Somewhat limited Stoniness	0.19	Somewhat limited Stoniness	0.19

Table 14.—Camp Areas, Picnic Areas, and Playgrounds—Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
HdxBb: Hazen, very stony---	60	Somewhat limited Stoniness	0.19	Somewhat limited Stoniness	0.19	Very limited Slope Stoniness	1.00 0.19
Hoosic, very stony--	35	Somewhat limited Stoniness	0.19	Somewhat limited Stoniness	0.19	Very limited Slope Stoniness	1.00 0.19
HhmBc: Hibernia, extremely stony-----	80	Very limited Saturated zone Stoniness	1.00 1.00	Very limited Stoniness Saturated zone	1.00 1.00	Very limited Stoniness Saturated zone Slope	1.00 1.00 0.50
HkrgBb: Hinckley, very stony	85	Somewhat limited Sand content Stoniness	0.78 0.19	Somewhat limited Sand content Stoniness	0.78 0.19	Very limited Slope Sand content Stoniness	1.00 0.78 0.19
HkrgCb: Hinckley, very stony	85	Somewhat limited Sand content Slope Stoniness	0.78 0.63 0.19	Somewhat limited Sand content Slope Stoniness	0.78 0.63 0.19	Very limited Slope Sand content Stoniness	1.00 0.78 0.19
HncD: Hollis-----	45	Very limited Slope Stoniness Depth to bedrock	1.00 1.00 1.00	Very limited Stoniness Slope Depth to bedrock	1.00 1.00 1.00	Very limited Stoniness Slope Depth to bedrock	1.00 1.00 1.00
Rock outcrop-----	30	Not rated		Not rated		Not rated	
Chatfield-----	20	Very limited Slope Stoniness	1.00 1.00	Very limited Stoniness Slope	1.00 1.00	Very limited Stoniness Slope Depth to bedrock	1.00 1.00 0.46
HonCb: Hoosic, very stony--	60	Somewhat limited Slope Stoniness	0.63 0.19	Somewhat limited Slope Stoniness	0.63 0.19	Very limited Slope Stoniness	1.00 0.19
Hazen, very stony---	30	Somewhat limited Slope Stoniness	0.63 0.19	Somewhat limited Slope Stoniness	0.63 0.19	Very limited Slope Stoniness	1.00 0.19
HopEb: Hoosic, very stony--	50	Very limited Slope Stoniness	1.00 0.19	Very limited Slope Stoniness	1.00 0.19	Very limited Slope Stoniness	1.00 0.19
Otisville, very stony-----	40	Very limited Slope Stoniness	1.00 0.19	Very limited Slope Stoniness	1.00 0.19	Very limited Slope Stoniness	1.00 0.19

Table 14.—Camp Areas, Picnic Areas, and Playgrounds—Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
LacBc: Lackawanna, extremely stony----	85	Very limited Stoniness	1.00	Very limited Stoniness	1.00	Very limited Stoniness Slope	1.00 0.50
LacCc: Lackawanna, extremely stony----	85	Very limited Stoniness Slope	1.00 0.63	Very limited Stoniness Slope	1.00 0.63	Very limited Stoniness Slope	1.00 1.00
LacDc: Lackawanna, extremely stony----	85	Very limited Slope Stoniness	1.00 1.00	Very limited Stoniness Slope	1.00 1.00	Very limited Stoniness Slope	1.00 1.00
LorB: Lordstown-----	50	Not limited		Not limited		Somewhat limited Slope Depth to bedrock	0.50 0.06
Wallpack-----	35	Not limited		Not limited		Somewhat limited Slope Gravel content	0.50 0.44
LorC: Lordstown-----	50	Somewhat limited Slope	0.63	Somewhat limited Slope	0.63	Very limited Slope Depth to bedrock	1.00 0.06
Wallpack-----	35	Somewhat limited Slope	0.63	Somewhat limited Slope	0.63	Very limited Slope Gravel content	1.00 0.44
LorCh: Lordstown, very rocky-----	50	Very limited Stoniness Slope	1.00 0.63	Very limited Stoniness Slope	1.00 0.63	Very limited Stoniness Slope Depth to bedrock	1.00 1.00 0.06
Wallpack, very rocky	35	Very limited Stoniness Slope	1.00 0.63	Very limited Stoniness Slope	1.00 0.63	Very limited Stoniness Slope	1.00 1.00
LorD: Lordstown-----	50	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope Depth to bedrock	1.00 0.06
Wallpack-----	35	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope Gravel content	1.00 0.44

Table 14.—Camp Areas, Picnic Areas, and Playgrounds—Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
LorDh: Lordstown, very rocky-----	50	Very limited Slope Stoniness	1.00 1.00	Very limited Stoniness Slope	1.00 1.00	Very limited Stoniness Slope Depth to bedrock	1.00 1.00 0.06
Wallpack, very rocky	40	Very limited Slope Stoniness	1.00 1.00	Very limited Stoniness Slope	1.00 1.00	Very limited Stoniness Slope	1.00 1.00
MabEh: Manlius, very rocky-	60	Very limited Slope Stoniness	1.00 1.00	Very limited Stoniness Slope	1.00 1.00	Very limited Stoniness Slope Depth to bedrock	1.00 1.00 0.71
Nassau, very rocky--	25	Very limited Slope Stoniness Depth to bedrock	1.00 1.00 1.00	Very limited Stoniness Slope Depth to bedrock	1.00 1.00 1.00	Very limited Stoniness Slope Depth to bedrock	1.00 1.00 1.00
NauBh: Nassau, very rocky--	50	Very limited Stoniness Depth to bedrock	1.00 1.00	Very limited Stoniness Depth to bedrock	1.00 1.00	Very limited Stoniness Depth to bedrock Gravel content Slope	1.00 1.00 0.99 0.50
Manlius, very rocky-	45	Very limited Stoniness Gravel content	1.00 0.02	Very limited Stoniness Gravel content	1.00 0.02	Very limited Stoniness Gravel content Depth to bedrock Slope	1.00 1.00 0.54 0.50
NauCh: Nassau, very rocky--	55	Very limited Stoniness Depth to bedrock Slope	1.00 1.00 0.63	Very limited Stoniness Depth to bedrock Slope	1.00 1.00 0.63	Very limited Stoniness Slope Depth to bedrock Gravel content	1.00 1.00 1.00 0.99
Manlius, very rocky-	40	Very limited Stoniness Slope Gravel content	1.00 0.63 0.02	Very limited Stoniness Slope Gravel content	1.00 0.63 0.02	Very limited Stoniness Slope Gravel content Depth to bedrock	1.00 1.00 1.00 0.54
NauDh: Nassau, very rocky--	50	Very limited Slope Stoniness Depth to bedrock	1.00 1.00 1.00	Very limited Stoniness Slope Depth to bedrock	1.00 1.00 1.00	Very limited Stoniness Slope Depth to bedrock Gravel content	1.00 1.00 1.00 0.99
Manlius, very rocky-	40	Very limited Slope Stoniness Gravel content	1.00 1.00 0.02	Very limited Stoniness Slope Gravel content	1.00 1.00 0.02	Very limited Stoniness Slope Gravel content Depth to bedrock	1.00 1.00 1.00 0.54

Table 14.—Camp Areas, Picnic Areas, and Playgrounds—Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
NavE:							
Nassau-----	50	Very limited		Very limited		Very limited	
		Slope	1.00	Stoniness	1.00	Stoniness	1.00
		Stoniness	1.00	Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
Rock outcrop-----	45	Not rated		Not rated		Not rated	
OpnCh:							
Oquaga, very rocky--	55	Very limited		Very limited		Very limited	
		Stoniness	1.00	Stoniness	1.00	Stoniness	1.00
		Slope	0.63	Slope	0.63	Slope	1.00
						Depth to bedrock	0.84
Lackawanna, very rocky-----	30	Very limited		Very limited		Very limited	
		Stoniness	1.00	Stoniness	1.00	Stoniness	1.00
		Slope	0.63	Slope	0.63	Slope	1.00
OpnDh:							
Oquaga, very rocky--	50	Very limited		Very limited		Very limited	
		Slope	1.00	Stoniness	1.00	Stoniness	1.00
		Stoniness	1.00	Slope	1.00	Slope	1.00
						Depth to bedrock	0.84
Lackawanna, very rocky-----	35	Very limited		Very limited		Very limited	
		Slope	1.00	Stoniness	1.00	Stoniness	1.00
		Stoniness	1.00	Slope	1.00	Slope	1.00
OprC:							
Oquaga-----	75	Very limited		Very limited		Very limited	
		Stoniness	1.00	Stoniness	1.00	Stoniness	1.00
		Slope	0.01	Slope	0.01	Slope	1.00
						Depth to bedrock	0.84
Rock outcrop-----	15	Not rated		Not rated		Not rated	
OprE:							
Oquaga-----	60	Very limited		Very limited		Very limited	
		Slope	1.00	Stoniness	1.00	Stoniness	1.00
		Stoniness	1.00	Slope	1.00	Slope	1.00
						Depth to bedrock	0.84
Rock outcrop-----	25	Not rated		Not rated		Not rated	
PHG:							
Pits, sand and gravel-----	95	Not rated		Not rated		Not rated	
PohA:							
Pompton-----	80	Very limited		Somewhat limited		Very limited	
		Saturated zone	1.00	Saturated zone	0.94	Saturated zone	1.00
QY:							
Pits, quarry-----	100	Not rated		Not rated		Not rated	

Table 14.—Camp Areas, Picnic Areas, and Playgrounds—Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
RkrB: Riverhead-----	85	Not limited		Not limited		Somewhat limited Slope	0.88
RnaF: Rock outcrop-----	40	Not rated		Not rated		Not rated	
Arnot-----	30	Very limited Slope	1.00	Very limited Stoniness	1.00	Very limited Stoniness	1.00
		Stoniness	1.00	Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
Rubble land-----	20	Not rated		Not rated		Not rated	
RnfC: Rock outcrop-----	40	Not rated		Not rated		Not rated	
Farmington-----	35	Very limited Stoniness	1.00	Very limited Stoniness	1.00	Very limited Stoniness	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Slope	0.63	Slope	0.63	Depth to bedrock	1.00
Galway-----	25	Very limited Stoniness	1.00	Very limited Stoniness	1.00	Very limited Stoniness	1.00
		Slope	0.63	Slope	0.63	Slope	1.00
						Depth to bedrock	0.90
RnfD: Rock outcrop-----	50	Not rated		Not rated		Not rated	
Farmington-----	40	Very limited Slope	1.00	Very limited Stoniness	1.00	Very limited Stoniness	1.00
		Stoniness	1.00	Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
Galway-----	10	Very limited Slope	1.00	Very limited Stoniness	1.00	Very limited Stoniness	1.00
		Stoniness	1.00	Slope	1.00	Slope	1.00
						Depth to bedrock	0.90
RoefBc: Rockaway, thin fragipan, extremely stony-----	85	Very limited Stoniness	1.00	Very limited Stoniness	1.00	Very limited Stoniness	1.00
						Slope	0.50
RoefCc: Rockaway, thin fragipan, extremely stony-----	85	Very limited Stoniness	1.00	Very limited Stoniness	1.00	Very limited Stoniness	1.00
		Slope	0.63	Slope	0.63	Slope	1.00
RoefDc: Rockaway, thin fragipan, extremely stony-----	85	Very limited Slope	1.00	Very limited Stoniness	1.00	Very limited Stoniness	1.00
		Stoniness	1.00	Slope	1.00	Slope	1.00

Table 14.—Camp Areas, Picnic Areas, and Playgrounds—Continued

Map symbol and soil name	Pct. of map unit	Camp areas	Value	Picnic areas	Value	Playgrounds	Value
		Rating class and limiting features		Rating class and limiting features		Rating class and limiting features	
RokB:							
Rockaway, thin fragipan-----	50	Very limited Stoniness	1.00	Very limited Stoniness	1.00	Very limited Stoniness Slope	1.00 0.50
Chatfield-----	30	Very limited Stoniness	1.00	Very limited Stoniness	1.00	Very limited Stoniness Slope Depth to bedrock	1.00 0.50 0.46
Rock outcrop-----	20	Not rated		Not rated		Not rated	
RokC:							
Rockaway, thin fragipan-----	45	Very limited Stoniness Slope	1.00 0.63	Very limited Stoniness Slope	1.00 0.63	Very limited Stoniness Slope	1.00 1.00
Chatfield-----	40	Very limited Stoniness Slope	1.00 0.63	Very limited Stoniness Slope	1.00 0.63	Very limited Stoniness Slope Depth to bedrock	1.00 1.00 0.46
Rock outcrop-----	15	Not rated		Not rated		Not rated	
RokD:							
Rockaway, thin fragipan-----	45	Very limited Slope Stoniness	1.00 1.00	Very limited Stoniness Slope	1.00 1.00	Very limited Stoniness Slope	1.00 1.00
Chatfield-----	25	Very limited Slope Stoniness	1.00 1.00	Very limited Stoniness Slope	1.00 1.00	Very limited Stoniness Slope Depth to bedrock	1.00 1.00 0.46
Rock outcrop-----	20	Not rated		Not rated		Not rated	
RooB:							
Rockaway, thin fragipan-----	50	Not limited		Not limited		Somewhat limited Slope	0.50
Urban land, Rockaway thin fragipan substratum-----	40	Not rated		Not rated		Not rated	
RooC:							
Rockaway, thin fragipan-----	45	Somewhat limited		Somewhat limited		Very limited	
Urban land, Rockaway thin fragipan substratum-----	40	Not rated		Not rated		Not rated	
RooD:							
Rockaway, thin fragipan-----	45	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00

Table 14.—Camp Areas, Picnic Areas, and Playgrounds—Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
RooD: (cont.) Urban land, Rockaway thin fragipan substratum-----	40	Not rated		Not rated		Not rated	
ScoA: Scio-----	80	Somewhat limited Saturated zone	0.77	Somewhat limited Saturated zone	0.43	Somewhat limited Saturated zone	0.77
SwfBc: Swartswood, extremely stony----	90	Very limited Stoniness	1.00	Very limited Stoniness	1.00	Very limited Stoniness Slope	1.00 0.50
SwfCc: Swartswood, extremely stony----	90	Very limited Stoniness Slope	1.00 0.63	Very limited Stoniness Slope	1.00 0.63	Very limited Stoniness Slope	1.00 1.00
SwfDc: Swartswood, extremely stony----	85	Very limited Slope Stoniness	1.00 1.00	Very limited Stoniness Slope	1.00 1.00	Very limited Stoniness Slope	1.00 1.00
UccAs: Udifluvents, occasionally flooded-----	90	Very limited Flooding Sand content	1.00 0.76	Somewhat limited Sand content	0.76	Somewhat limited Sand content Flooding	0.76 0.60
UdaB: Udorthents-----	100	Somewhat limited Permeability	0.96	Somewhat limited Permeability	0.96	Somewhat limited Permeability Slope	0.96 0.50
UdaB: Udorthents-----	60	Somewhat limited Permeability	0.96	Somewhat limited Permeability	0.96	Somewhat limited Permeability	0.96
Urban land-----	40	Not rated		Not rated		Not rated	
UnfA: Unadilla-----	80	Not limited		Not limited		Not limited	
UnfB: Unadilla-----	80	Not limited		Not limited		Very limited Slope	1.00
USCHRB: Urban land, Chatfield substratum-----	40	Not rated		Not rated		Not rated	
Chatfield-----	25	Not limited		Not limited		Somewhat limited Slope Depth to bedrock	0.50 0.46



Table 14.—Camp Areas, Picnic Areas, and Playgrounds—Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
USCHRB: (cont.)							
Rock outcrop-----	20	Not rated		Not rated		Not rated	
USCHRC:							
Urban land, Chatfield substratum-----	40	Not rated		Not rated		Not rated	
Chatfield-----	25	Somewhat limited Slope	0.63	Somewhat limited Slope	0.63	Very limited Slope Depth to bedrock	1.00 0.46
Rock outcrop-----	20	Not rated		Not rated		Not rated	
USCHRD:							
Urban land, Chatfield substratum-----	40	Not rated		Not rated		Not rated	
Chatfield-----	25	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope Depth to bedrock	1.00 0.46
Rock outcrop-----	20	Not rated		Not rated		Not rated	
USFARC:							
Urban land, Farmington substratum-----	50	Not rated		Not rated		Not rated	
Farmington-----	30	Very limited Depth to bedrock Slope	1.00 0.63	Very limited Depth to bedrock Slope	1.00 0.63	Very limited Slope Depth to bedrock	1.00 1.00
Rock outcrop-----	20	Not rated		Not rated		Not rated	
USFARD:							
Urban land, Farmington substratum-----	40	Not rated		Not rated		Not rated	
Farmington-----	35	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Slope Depth to bedrock	1.00 1.00
Rock outcrop-----	25	Not rated		Not rated		Not rated	
USFAWB:							
Urban land, Farmington substratum-----	50	Not rated		Not rated		Not rated	
Farmington-----	30	Very limited Depth to bedrock	1.00	Very limited Depth to bedrock	1.00	Very limited Depth to bedrock Slope	1.00 0.50
Wassaic-----	20	Not limited		Not limited		Somewhat limited Depth to bedrock Slope	0.65 0.50

Table 14.—Camp Areas, Picnic Areas, and Playgrounds—Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
USHAZA:							
Urban land, Hazen substratum-----	45	Not rated		Not rated		Not rated	
Hazen-----	35	Not limited		Not limited		Not limited	
Hoosic-----	20	Not limited		Not limited		Not limited	
USHAZB:							
Urban land, Hazen substratum-----	55	Not rated		Not rated		Not rated	
Hazen-----	25	Not limited		Not limited		Very limited Slope	1.00
Hoosic-----	20	Not limited		Not limited		Very limited Slope	1.00
USNAMB:							
Urban land, Nassau substratum-----	45	Not rated		Not rated		Not rated	
Nassau-----	30	Very limited Depth to bedrock	1.00	Very limited Depth to bedrock	1.00	Very limited Depth to bedrock Gravel content Slope	1.00 0.99 0.50
Manlius-----	25	Somewhat limited Gravel content Stoniness	0.02 0.01	Somewhat limited Gravel content Stoniness	0.02 0.01	Very limited Gravel content Depth to bedrock Slope Stoniness	1.00 0.54 0.50 0.01
USNAMC:							
Urban land, Nassau substratum-----	55	Not rated		Not rated		Not rated	
Nassau-----	25	Very limited Depth to bedrock Slope	1.00 0.63	Very limited Depth to bedrock Slope	1.00 0.63	Very limited Slope Depth to bedrock Gravel content	1.00 1.00 0.99
Manlius-----	20	Somewhat limited Slope Gravel content Stoniness	0.63 0.02 0.01	Somewhat limited Slope Gravel content Stoniness	0.63 0.02 0.01	Very limited Slope Gravel content Depth to bedrock Stoniness	1.00 1.00 0.54 0.01
USNAMD:							
Urban land, Nassau substratum-----	60	Not rated		Not rated		Not rated	
Nassau-----	25	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Slope Depth to bedrock Gravel content	1.00 1.00 0.99
Manlius-----	15	Very limited Slope Gravel content Stoniness	1.00 0.02 0.01	Very limited Slope Gravel content Stoniness	1.00 0.02 0.01	Very limited Slope Gravel content Depth to bedrock Stoniness	1.00 1.00 0.54 0.01

Table 14.—Camp Areas, Picnic Areas, and Playgrounds—Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
USWUSB: Urban land, Wurtsboro substratum-----	45	Not rated		Not rated		Not rated	
Wurtsboro-----	35	Somewhat limited		Somewhat limited		Somewhat limited Slope	0.50
Swartswood-----	20	Not limited		Not limited		Somewhat limited Slope	0.50
VepBc: Venango, extremely stony-----	90	Very limited Saturated zone Stoniness	1.00 1.00	Very limited Stoniness Saturated zone	1.00 1.00	Very limited Stoniness Saturated zone Slope	1.00 1.00 0.50
VepCc: Venango, extremely stony-----	85	Very limited Saturated zone Stoniness Slope	1.00 1.00 0.63	Very limited Stoniness Saturated zone Slope	1.00 1.00 0.63	Very limited Stoniness Saturated zone Slope	1.00 1.00 1.00
WaahAt: Wallkill, frequently flooded-----	90	Very limited Saturated zone Flooding Ponding	1.00 1.00 1.00	Very limited Ponding Saturated zone Flooding	1.00 1.00 0.40	Very limited Saturated zone Flooding Ponding	1.00 1.00 1.00
WabBb: Wallpack, aeolian mantle, very stony-	85	Somewhat limited Stoniness	0.19	Somewhat limited Stoniness	0.19	Somewhat limited Slope Stoniness	0.50 0.19
WabCb: Wallpack, aeolian mantle, very stony-	85	Somewhat limited Slope Stoniness	0.63 0.19	Somewhat limited Slope Stoniness	0.63 0.19	Very limited Slope Stoniness	1.00 0.19
WabDb: Wallpack, aeolian mantle, very stony-	85	Very limited Slope Stoniness	1.00 0.19	Very limited Slope Stoniness	1.00 0.19	Very limited Slope Stoniness	1.00 0.19
WacB: Wallpack-----	85	Not limited		Not limited		Somewhat limited Slope Gravel content	0.50 0.44
WacBc: Wallpack, extremely stony-----	85	Very limited Stoniness	1.00	Very limited Stoniness	1.00	Very limited Stoniness Slope	1.00 0.50

Table 14.—Camp Areas, Picnic Areas, and Playgrounds—Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
WacC: Wallpack-----	85	Somewhat limited Slope	0.63	Somewhat limited Slope	0.63	Very limited Slope Gravel content	1.00 0.44
WacCc: Wallpack, extremely stony-----	85	Very limited Stoniness Slope	1.00 0.63	Very limited Stoniness Slope	1.00 0.63	Very limited Stoniness Slope	1.00 1.00
WacD: Wallpack-----	85	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope Gravel content	1.00 0.44
WacDc: Wallpack, extremely stony-----	85	Very limited Slope Stoniness	1.00 1.00	Very limited Stoniness Slope	1.00 1.00	Very limited Stoniness Slope	1.00 1.00
WATER: Water-----	100	Not rated		Not rated		Not rated	
WecBc: Wellsboro, extremely stony-----	85	Very limited Stoniness Saturated zone	1.00 0.39	Very limited Stoniness Saturated zone	1.00 0.19	Very limited Stoniness Slope Saturated zone	1.00 0.50 0.39
WecCc: Wellsboro, extremely stony-----	85	Very limited Stoniness Slope Saturated zone	1.00 0.63 0.39	Very limited Stoniness Slope Saturated zone	1.00 0.63 0.19	Very limited Stoniness Slope Saturated zone	1.00 1.00 0.39
WumBc: Wurtsboro, extremely stony-----	85	Very limited Stoniness Saturated zone	1.00 0.98	Very limited Stoniness Saturated zone	1.00 0.75	Very limited Stoniness Saturated zone Slope	1.00 0.98 0.50
WusBc: Wurtsboro, extremely stony-----	60	Very limited Stoniness Saturated zone	1.00 0.98	Very limited Stoniness Saturated zone	1.00 0.75	Very limited Stoniness Saturated zone Slope	1.00 0.98 0.50
Swartswood, extremely stony----	40	Very limited Stoniness	1.00	Very limited Stoniness	1.00	Very limited Stoniness Slope	1.00 0.50

Table 14.—Camp Areas, Picnic Areas, and Playgrounds—Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
WusCc: Wurtsboro, extremely stony-----	60	Very limited Stoniness Saturated zone Slope	 1.00 0.98 0.63	Very limited Stoniness Saturated zone Slope	 1.00 0.75 0.63	Very limited Stoniness Slope Saturated zone	 1.00 1.00 0.98
Swartswood, extremely stony----	40	Very limited Stoniness Slope	 1.00 0.63	Very limited Stoniness Slope	 1.00 0.63	Very limited Stoniness Slope	 1.00 1.00
WusDc: Wurtsboro, extremely stony-----	80	Very limited Slope Stoniness Saturated zone	 1.00 1.00 0.98	Very limited Stoniness Slope Saturated zone	 1.00 1.00 0.75	Very limited Stoniness Slope Saturated zone	 1.00 1.00 0.98
Swartswood, extremely stony----	20	Very limited Slope Stoniness	 1.00 1.00	Very limited Stoniness Slope	 1.00 1.00	Very limited Stoniness Slope	 1.00 1.00

Table 15.—Paths, Trails, and Golf Fairways

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
AhbBc: Alden, extremely stony-----	90	Very limited Stoniness Saturated zone Ponding	 1.00 1.00 1.00	Very limited Stoniness Saturated zone Ponding	 1.00 1.00 1.00	Very limited Ponding Saturated zone	 1.00 1.00
AhcBc: Alden, gneiss till substratum, extremely stony----	90	Very limited Stoniness Saturated zone Ponding	 1.00 1.00 1.00	Very limited Stoniness Saturated zone Ponding	 1.00 1.00 1.00	Very limited Ponding Saturated zone	 1.00 1.00
AruCh: Arnot, very rocky---	55	Very limited Stoniness	 1.00	Very limited Stoniness	 1.00	Very limited Depth to bedrock Droughty Slope	 1.00 0.99 0.01
Lordstown, very rocky-----	40	Very limited Stoniness	 1.00	Very limited Stoniness	 1.00	Somewhat limited Depth to bedrock Slope	 0.06 0.01
ArvD: Arnot-----	45	Very limited Stoniness Slope	 1.00 1.00	Very limited Stoniness	 1.00	Very limited Depth to bedrock Slope Droughty	 1.00 1.00 0.99
Lordstown-----	40	Very limited Stoniness Slope	 1.00 1.00	Very limited Stoniness	 1.00	Very limited Slope Depth to bedrock	 1.00 0.06
Rock outcrop-----	15	Not rated		Not rated		Not rated	
ArvE: Arnot-----	60	Very limited Stoniness Slope	 1.00 1.00	Very limited Stoniness Slope	 1.00 1.00	Very limited Depth to bedrock Slope Droughty	 1.00 1.00 0.99
Lordstown-----	25	Very limited Stoniness Slope	 1.00 1.00	Very limited Stoniness Slope	 1.00 1.00	Very limited Slope Depth to bedrock	 1.00 0.06
Rock outcrop-----	15	Not rated		Not rated		Not rated	
AtcA: Atherton, very poorly drained-----	60	Very limited Saturated zone Ponding	 1.00 1.00	Very limited Saturated zone Ponding	 1.00 1.00	Very limited Ponding Saturated zone	 1.00 1.00

Table 15.—Paths, Trails, and Golf Fairways—Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
AtcA: Atherton, poorly drained-----	30	Very limited Saturated zone	1.00	Very limited Saturated zone	1.00	Very limited Saturated zone	1.00
CatbA: Catden-----	85	Very limited Saturated zone Ponding	1.00 1.00	Very limited Saturated zone Ponding	1.00 1.00	Very limited Ponding Saturated zone	1.00 1.00
ChkC: Chatfield-----	45	Very limited Stoniness	1.00	Very limited Stoniness	1.00	Somewhat limited Depth to bedrock Slope	0.46 0.01
Hollis-----	30	Very limited Stoniness	1.00	Very limited Stoniness	1.00	Very limited Depth to bedrock Droughty Slope	1.00 0.58 0.01
Rock outcrop-----	25	Not rated		Not rated		Not rated	
ChkE: Chatfield-----	45	Very limited Stoniness Slope	1.00 1.00	Very limited Stoniness Slope	1.00 1.00	Very limited Slope Depth to bedrock	1.00 0.46
Hollis-----	30	Very limited Stoniness Slope	1.00 1.00	Very limited Stoniness Slope	1.00 1.00	Very limited Depth to bedrock Slope Droughty	1.00 1.00 0.58
Rock outcrop-----	20	Not rated		Not rated		Not rated	
ChwBc: Chippewa, extremely stony-----	80	Very limited Stoniness Saturated zone Ponding	1.00 1.00 1.00	Very limited Stoniness Saturated zone Ponding	1.00 1.00 1.00	Very limited Ponding Saturated zone Droughty	1.00 1.00 0.49
CorA: Colonie-----	80	Somewhat limited Sand content	0.19	Somewhat limited Sand content	0.19	Somewhat limited Droughty	0.47
CorB: Colonie-----	80	Somewhat limited Sand content	0.19	Somewhat limited Sand content	0.19	Somewhat limited Droughty	0.47
DefAr: Delaware, rarely flooded-----	80	Not limited		Not limited		Not limited	
DefBr: Delaware, rarely flooded-----	80	Not limited		Not limited		Not limited	

Table 15.—Paths, Trails, and Golf Fairways—Continued

Map symbol and soil name	Pct. of map unit	Paths and trails	Value	Off-road motorcycle trails	Value	Golf fairways	Value
		Rating class and limiting features		Rating class and limiting features		Rating class and limiting features	
FaxC: Farmington-----	50	Very limited Stoniness	1.00	Very limited Stoniness	1.00	Very limited Depth to bedrock Droughty Slope	1.00 0.97 0.01
Rock outcrop-----	40	Not rated		Not rated		Not rated	
FdwB: Farmington-----	40	Very limited Stoniness	1.00	Very limited Stoniness	1.00	Very limited Depth to bedrock Droughty	1.00 0.97
Wassaic-----	30	Very limited Stoniness	1.00	Very limited Stoniness	1.00	Somewhat limited Depth to bedrock	0.65
Rock outcrop-----	25	Not rated		Not rated		Not rated	
FmhAs: Fluvaquents, occasionally flooded-----	90	Very limited Saturated zone	1.00	Very limited Saturated zone	1.00	Very limited Saturated zone Flooding	1.00 0.60
FrdAb: Fredon, very stony--	45	Somewhat limited Saturated zone Stoniness	0.92 0.19	Somewhat limited Saturated zone Stoniness	0.92 0.19	Somewhat limited Saturated zone	0.96
Halsey, very stony--	40	Very limited Saturated zone Ponding Stoniness	1.00 1.00 0.19	Very limited Saturated zone Ponding Stoniness	1.00 1.00 0.19	Very limited Ponding Saturated zone	1.00 1.00
GawEh: Galway, very rocky--	80	Very limited Stoniness Slope	1.00 1.00	Very limited Stoniness Slope	1.00 1.00	Very limited Slope Depth to bedrock Droughty	1.00 0.90 0.01
HdxAb: Hazen, very stony---	50	Somewhat limited Stoniness	0.19	Somewhat limited Stoniness	0.19	Somewhat limited Droughty	0.01
Hoosic, very stony--	40	Somewhat limited Stoniness	0.19	Somewhat limited Stoniness	0.19	Somewhat limited Droughty	0.10
HdxBb: Hazen, very stony---	60	Somewhat limited Stoniness	0.19	Somewhat limited Stoniness	0.19	Somewhat limited Droughty	0.01
Hoosic, very stony--	35	Somewhat limited Stoniness	0.19	Somewhat limited Stoniness	0.19	Somewhat limited Droughty	0.10
HhmBc: Hibernia, extremely stony-----	80	Very limited Stoniness Saturated zone	1.00 1.00	Very limited Stoniness Saturated zone	1.00 1.00	Very limited Saturated zone	1.00



Table 15.—Paths, Trails, and Golf Fairways—Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
HkrgBb: Hinckley, very stony	85	Somewhat limited Sand content Stoniness	0.78 0.19	Somewhat limited Sand content Stoniness	0.78 0.19	Very limited Droughty	1.00
HkrgCb: Hinckley, very stony	85	Somewhat limited Sand content Stoniness	0.78 0.19	Somewhat limited Sand content Stoniness	0.78 0.19	Very limited Droughty Slope	1.00 0.63
HncD: Hollis-----	45	Very limited Stoniness Slope	1.00 1.00	Very limited Stoniness	1.00	Very limited Depth to bedrock Slope Droughty	1.00 1.00 0.58
Rock outcrop-----	30	Not rated		Not rated		Not rated	
Chatfield-----	20	Very limited Stoniness Slope	1.00 1.00	Very limited Stoniness	1.00	Very limited Slope Depth to bedrock	1.00 0.46
HonCb: Hoosic, very stony--	60	Somewhat limited Stoniness	0.19	Somewhat limited Stoniness	0.19	Somewhat limited Slope Droughty	0.63 0.10
Hazen, very stony---	30	Somewhat limited Stoniness	0.19	Somewhat limited Stoniness	0.19	Somewhat limited Slope Droughty	0.63 0.01
HopEb: Hoosic, very stony--	50	Very limited Slope Stoniness	1.00 0.19	Very limited Slope Stoniness	1.00 0.19	Very limited Slope Droughty	1.00 0.10
Otisville, very stony-----	40	Very limited Slope Stoniness	1.00 0.19	Very limited Slope Stoniness	1.00 0.19	Very limited Slope Droughty	1.00 0.95
LacBc: Lackawanna, extremely stony----	85	Very limited Stoniness	1.00	Very limited Stoniness	1.00	Not limited	
LacCc: Lackawanna, extremely stony----	85	Very limited Stoniness	1.00	Very limited Stoniness	1.00	Somewhat limited Slope	0.63
LacDc: Lackawanna, extremely stony----	85	Very limited Stoniness Slope	1.00 1.00	Very limited Stoniness	1.00	Very limited Slope	1.00
LorB: Lordstown-----	50	Not limited		Not limited		Somewhat limited Depth to bedrock	0.06

Table 15.—Paths, Trails, and Golf Fairways—Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
LorB: (cont.)							
Wallpack-----	35	Not limited		Not limited		Not limited	
LorC:							
Lordstown-----	50	Not limited		Not limited		Somewhat limited	
						Slope	0.63
						Depth to bedrock	0.06
Wallpack-----	35	Very limited		Very limited		Somewhat limited	
		Erodibility	1.00	Erodibility	1.00	Slope	0.63
LorCh:							
Lordstown, very							
rocky-----	50	Very limited		Very limited		Somewhat limited	
		Stoniness	1.00	Stoniness	1.00	Slope	0.63
						Depth to bedrock	0.06
Wallpack, very rocky	35	Very limited		Very limited		Somewhat limited	
		Stoniness	1.00	Stoniness	1.00	Slope	0.63
LorD:							
Lordstown-----	50	Somewhat limited		Not limited		Very limited	
		Slope	0.50			Slope	1.00
						Depth to bedrock	0.06
Wallpack-----	35	Very limited		Very limited		Very limited	
		Erodibility	1.00	Erodibility	1.00	Slope	1.00
		Slope	0.50				
LorDh:							
Lordstown, very							
rocky-----	50	Very limited		Very limited		Very limited	
		Stoniness	1.00	Stoniness	1.00	Slope	1.00
		Slope	1.00			Depth to bedrock	0.06
Wallpack, very rocky	40	Very limited		Very limited		Very limited	
		Stoniness	1.00	Stoniness	1.00	Slope	1.00
		Slope	1.00				
MabEh:							
Manlius, very rocky-	60	Very limited		Very limited		Very limited	
		Stoniness	1.00	Stoniness	1.00	Slope	1.00
		Slope	1.00	Slope	1.00	Depth to bedrock	0.71
						Droughty	0.70
Nassau, very rocky--	25	Very limited		Very limited		Very limited	
		Stoniness	1.00	Stoniness	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
						Droughty	1.00
NauBh:							
Nassau, very rocky--	50	Very limited		Very limited		Very limited	
		Stoniness	1.00	Stoniness	1.00	Depth to bedrock	1.00
						Droughty	1.00
						Stoniness	0.92
Manlius, very rocky-	45	Very limited		Very limited		Somewhat limited	
		Stoniness	1.00	Stoniness	1.00	Stoniness	0.99
						Droughty	0.56
						Depth to bedrock	0.54
						Gravel content	0.02

Table 15.—Paths, Trails, and Golf Fairways—Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
NauCh: Nassau, very rocky--	55	Very limited Stoniness	1.00	Very limited Stoniness	1.00	Very limited Depth to bedrock Droughty Stoniness Slope	1.00 1.00 0.92 0.63
Manlius, very rocky--	40	Very limited Stoniness	1.00	Very limited Stoniness	1.00	Somewhat limited Stoniness Slope Droughty Depth to bedrock Gravel content	0.99 0.63 0.56 0.54 0.02
NauDh: Nassau, very rocky--	50	Very limited Stoniness Slope	1.00 1.00	Very limited Stoniness	1.00	Very limited Depth to bedrock Slope Droughty Stoniness	1.00 1.00 1.00 0.92
Manlius, very rocky--	40	Very limited Stoniness Slope	1.00 1.00	Very limited Stoniness	1.00	Very limited Slope Stoniness Droughty Depth to bedrock Gravel content	1.00 0.99 0.56 0.54 0.02
NavE: Nassau-----	50	Very limited Stoniness Slope	1.00 1.00	Very limited Stoniness Slope	1.00 1.00	Very limited Depth to bedrock Slope Droughty	1.00 1.00 1.00
Rock outcrop-----	45	Not rated		Not rated		Not rated	
OpnCh: Oquaga, very rocky--	55	Very limited Stoniness	1.00	Very limited Stoniness	1.00	Somewhat limited Depth to bedrock Droughty Slope	0.84 0.84 0.63
Lackawanna, very rocky-----	30	Very limited Stoniness	1.00	Very limited Stoniness	1.00	Somewhat limited Slope	0.63
OpnDh: Oquaga, very rocky--	50	Very limited Stoniness Slope	1.00 1.00	Very limited Stoniness	1.00	Very limited Slope Depth to bedrock Droughty	1.00 0.84 0.84
Lackawanna, very rocky-----	35	Very limited Stoniness Slope	1.00 1.00	Very limited Stoniness	1.00	Very limited Slope	1.00
OprC: Oquaga-----	75	Very limited Stoniness	1.00	Very limited Stoniness	1.00	Somewhat limited Depth to bedrock Droughty Slope	0.84 0.84 0.01

Table 15.—Paths, Trails, and Golf Fairways—Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
OprC: (cont.) Rock outcrop-----	15	Not rated		Not rated		Not rated	
OprE: Oquaga-----	60	Very limited Stoniness Slope	1.00 1.00	Very limited Stoniness Slope	1.00 1.00	Very limited Slope Depth to bedrock Droughty	1.00 0.84 0.84
Rock outcrop-----	25	Not rated		Not rated		Not rated	
PHG: Pits, sand and gravel-----	95	Not rated		Not rated		Not rated	
PohA: Pompton-----	80	Somewhat limited Saturated zone	0.86	Somewhat limited Saturated zone	0.86	Somewhat limited Saturated zone	0.94
QY: Pits, quarry-----	100	Not rated		Not rated		Not rated	
RkrB: Riverhead-----	85	Not limited		Not limited		Not limited	
RnaF: Rock outcrop-----	40	Not rated		Not rated		Not rated	
Arnot-----	30	Very limited Stoniness Slope	1.00 1.00	Very limited Stoniness Slope	1.00 1.00	Very limited Depth to bedrock Slope Droughty	1.00 1.00 0.99
Rubble land-----	20	Not rated		Not rated		Not rated	
RnfC: Rock outcrop-----	40	Not rated		Not rated		Not rated	
Farmington-----	35	Very limited Stoniness	1.00	Very limited Stoniness	1.00	Very limited Depth to bedrock Droughty Slope	1.00 0.97 0.63
Galway-----	25	Very limited Stoniness	1.00	Very limited Stoniness	1.00	Somewhat limited Depth to bedrock Slope Droughty	0.90 0.63 0.01
RnfD: Rock outcrop-----	50	Not rated		Not rated		Not rated	
Farmington-----	40	Very limited Stoniness Slope	1.00 1.00	Very limited Stoniness	1.00	Very limited Depth to bedrock Slope Droughty	1.00 1.00 0.97
Galway-----	10	Very limited Stoniness Slope	1.00 1.00	Very limited Stoniness	1.00	Very limited Slope Depth to bedrock Droughty	1.00 0.90 0.01

Table 15.—Paths, Trails, and Golf Fairways—Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
RoefBc: Rockaway, thin fragipan, extremely stony-----	85	Very limited Stoniness	1.00	Very limited Stoniness	1.00	Somewhat limited Droughty	0.07
RoefCc: Rockaway, thin fragipan, extremely stony-----	85	Very limited Stoniness	1.00	Very limited Stoniness	1.00	Somewhat limited Slope Droughty	0.63 0.07
RoefDc: Rockaway, thin fragipan, extremely stony-----	85	Very limited Stoniness Slope	1.00 1.00	Very limited Stoniness	1.00	Very limited Slope Droughty	1.00 0.07
RokB: Rockaway, thin fragipan-----	50	Very limited Stoniness	1.00	Very limited Stoniness	1.00	Somewhat limited Droughty	0.07
Chatfield-----	30	Very limited Stoniness	1.00	Very limited Stoniness	1.00	Somewhat limited Depth to bedrock	0.46
Rock outcrop-----	20	Not rated		Not rated		Not rated	
RokC: Rockaway, thin fragipan-----	45	Very limited Stoniness	1.00	Very limited Stoniness	1.00	Somewhat limited Slope Droughty	0.63 0.07
Chatfield-----	40	Very limited Stoniness	1.00	Very limited Stoniness	1.00	Somewhat limited Slope Depth to bedrock	0.63 0.46
Rock outcrop-----	15	Not rated		Not rated		Not rated	
RokD: Rockaway, thin fragipan-----	45	Very limited Stoniness Slope	1.00 1.00	Very limited Stoniness	1.00	Very limited Slope Droughty	1.00 0.07
Chatfield-----	25	Very limited Stoniness Slope	1.00 1.00	Very limited Stoniness	1.00	Very limited Slope Depth to bedrock	1.00 0.46
Rock outcrop-----	20	Not rated		Not rated		Not rated	
RooB: Rockaway, thin fragipan-----	50	Not limited		Not limited		Somewhat limited Droughty	0.07

Table 15.—Paths, Trails, and Golf Fairways—Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
RooB: (cont.)							
Urban land, Rockaway thin fragipan substratum-----	40	Not rated		Not rated		Not rated	
RooC:							
Rockaway, thin fragipan-----	45	Not limited		Not limited		Somewhat limited Slope Droughty	0.63 0.07
Urban land, Rockaway thin fragipan substratum-----	40	Not rated		Not rated		Not rated	
RooD:							
Rockaway, thin fragipan-----	45	Somewhat limited Slope	0.50	Not limited		Very limited Slope Droughty	1.00 0.07
Urban land, Rockaway thin fragipan substratum-----	40	Not rated		Not rated		Not rated	
ScoA:							
Scio-----	80	Somewhat limited Saturated zone	0.08	Somewhat limited Saturated zone	0.08	Somewhat limited Saturated zone	0.43
SwfBc:							
Swartswood, extremely stony----	90	Very limited Stoniness	1.00	Very limited Stoniness	1.00	Somewhat limited Droughty	0.01
SwfCc:							
Swartswood, extremely stony----	90	Very limited Stoniness	1.00	Very limited Stoniness	1.00	Somewhat limited Slope Droughty	0.63 0.01
SwfDc:							
Swartswood, extremely stony----	85	Very limited Stoniness Slope	1.00 1.00	Very limited Stoniness	1.00	Very limited Slope Droughty	1.00 0.01
UccAs:							
Udifluvents, occasionally flooded-----	90	Somewhat limited Sand content	0.76	Somewhat limited Sand content	0.76	Somewhat limited Droughty Flooding	0.96 0.60
UdaB:							
Udorthents-----	100	Not limited		Not limited		Somewhat limited Droughty	0.01
UdauB:							
Udorthents-----	60	Not limited		Not limited		Somewhat limited Droughty	0.01
Urban land-----	40	Not rated		Not rated		Not rated	

Table 15.—Paths, Trails, and Golf Fairways—Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Udaub:							
Udorthents-----	60	Not limited		Not limited		Somewhat limited Droughty	0.01
Urban land-----	40	Not rated		Not rated		Not rated	
UnfA:							
Unadilla-----	80	Not limited		Not limited		Not limited	
UnfB:							
Unadilla-----	80	Not limited		Not limited		Not limited	
USCHRB:							
Urban land, Chatfield substratum-----	40	Not rated		Not rated		Not rated	
Chatfield-----	25	Not limited		Not limited		Somewhat limited Depth to bedrock	0.46
Rock outcrop-----	20	Not rated		Not rated		Not rated	
USCHRC:							
Urban land, Chatfield substratum-----	40	Not rated		Not rated		Not rated	
Chatfield-----	25	Not limited		Not limited		Somewhat limited Slope Depth to bedrock	0.63 0.46
Rock outcrop-----	20	Not rated		Not rated		Not rated	
USCHRD:							
Urban land, Chatfield substratum-----	40	Not rated		Not rated		Not rated	
Chatfield-----	25	Very limited Slope	1.00	Not limited		Very limited Slope Depth to bedrock	1.00 0.46
Rock outcrop-----	20	Not rated		Not rated		Not rated	
USFARC:							
Urban land, Farmington substratum-----	50	Not rated		Not rated		Not rated	
Farmington-----	30	Not limited		Not limited		Very limited Depth to bedrock Droughty Slope	1.00 0.97 0.63
Rock outcrop-----	20	Not rated		Not rated		Not rated	
USFARD:							
Urban land, Farmington substratum-----	40	Not rated		Not rated		Not rated	

Table 15.—Paths, Trails, and Golf Fairways—Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
USFARD: (cont.)							
Farmington-----	35	Very limited Slope	1.00	Not limited		Very limited Depth to bedrock Slope Droughty	1.00 1.00 0.97
Rock outcrop-----	25	Not rated		Not rated		Not rated	
USFAWB:							
Urban land, Farmington substratum-----	50	Not rated		Not rated		Not rated	
Farmington-----	30	Not limited		Not limited		Very limited Depth to bedrock Droughty	1.00 0.97
Wassaic-----	20	Not limited		Not limited		Somewhat limited Depth to bedrock	0.65
USHAZA:							
Urban land, Hazen substratum-----	45	Not rated		Not rated		Not rated	
Hazen-----	35	Not limited		Not limited		Somewhat limited Droughty	0.01
Hoosic-----	20	Not limited		Not limited		Somewhat limited Droughty	0.10
USHAZB:							
Urban land, Hazen substratum-----	55	Not rated		Not rated		Not rated	
Hazen-----	25	Not limited		Not limited		Somewhat limited Droughty	0.01
Hoosic-----	20	Not limited		Not limited		Somewhat limited Droughty	0.10
USNAMB:							
Urban land, Nassau substratum-----	45	Not rated		Not rated		Not rated	
Nassau-----	30	Not limited		Not limited		Very limited Depth to bedrock Droughty Stoniness	1.00 1.00 0.92
Manlius-----	25	Somewhat limited Stoniness	0.01	Somewhat limited Stoniness	0.01	Somewhat limited Stoniness Droughty Depth to bedrock Gravel content	0.99 0.56 0.54 0.02
USNAMC:							
Urban land, Nassau substratum-----	55	Not rated		Not rated		Not rated	



Table 15.—Paths, Trails, and Golf Fairways—Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
USNAMC: (cont.)							
Nassau-----	25	Not limited		Not limited		Very limited	
						Depth to bedrock	1.00
						Droughty	1.00
						Stoniness	0.92
						Slope	0.63
Manlius-----	20	Somewhat limited		Somewhat limited		Somewhat limited	
		Stoniness	0.01	Stoniness	0.01	Stoniness	0.99
						Slope	0.63
						Droughty	0.56
						Depth to bedrock	0.54
						Gravel content	0.02
USNAMD:							
Urban land, Nassau							
substratum-----	60	Not rated		Not rated		Not rated	
Nassau-----	25	Somewhat limited		Not limited		Very limited	
		Slope	0.50			Depth to bedrock	1.00
						Slope	1.00
						Droughty	1.00
						Stoniness	0.92
Manlius-----	15	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.50	Stoniness	0.01	Slope	1.00
		Stoniness	0.01			Stoniness	0.99
						Droughty	0.56
						Depth to bedrock	0.54
						Gravel content	0.02
USWUSB:							
Urban land,							
Wurtsboro							
substratum-----	45	Not rated		Not rated		Not rated	
Wurtsboro-----	35	Somewhat limited		Somewhat limited		Somewhat limited	
		Saturated zone	0.44	Saturated zone	0.44	Saturated zone	0.75
Swartswood-----	20	Not limited		Not limited		Somewhat limited	
						Droughty	0.01
VepBc:							
Venango, extremely							
stony-----	90	Very limited		Very limited		Very limited	
		Stoniness	1.00	Stoniness	1.00	Saturated zone	1.00
		Saturated zone	1.00	Saturated zone	1.00		
VepCc:							
Venango, extremely							
stony-----	85	Very limited		Very limited		Very limited	
		Stoniness	1.00	Stoniness	1.00	Saturated zone	1.00
		Saturated zone	1.00	Saturated zone	1.00	Slope	0.63
WaahAt:							
Wallkill, frequently							
flooded-----	90	Very limited		Very limited		Very limited	
		Saturated zone	1.00	Saturated zone	1.00	Ponding	1.00
		Ponding	1.00	Ponding	1.00	Flooding	1.00
		Flooding	0.40	Flooding	0.40	Saturated zone	1.00

Table 15.—Paths, Trails, and Golf Fairways—Continued

Map symbol and soil name	Pct. of map unit	Paths and trails	Value	Off-road motorcycle trails	Value	Golf fairways	Value
		Rating class and limiting features		Rating class and limiting features		Rating class and limiting features	
WabBb: Wallpack, aeolian mantle, very stony-	85	Somewhat limited Stoniness	0.19	Somewhat limited Stoniness	0.19	Not limited	
WabCb: Wallpack, aeolian mantle, very stony-	85	Very limited Erodibility Stoniness	1.00 0.19	Very limited Erodibility Stoniness	1.00 0.19	Somewhat limited Slope	0.63
WabDb: Wallpack, aeolian mantle, very stony-	85	Very limited Erodibility Slope Stoniness	1.00 1.00 0.19	Very limited Erodibility Stoniness	1.00 0.19	Very limited Slope	1.00
WacB: Wallpack-----	85	Not limited		Not limited		Not limited	
WacBc: Wallpack, extremely stony-----	85	Very limited Stoniness	1.00	Very limited Stoniness	1.00	Not limited	
WacC: Wallpack-----	85	Very limited Erodibility	1.00	Very limited Erodibility	1.00	Somewhat limited Slope	0.63
WacCc: Wallpack, extremely stony-----	85	Very limited Stoniness	1.00	Very limited Stoniness	1.00	Somewhat limited Slope	0.63
WacD: Wallpack-----	85	Very limited Erodibility Slope	1.00 0.50	Very limited Erodibility	1.00	Very limited Slope	1.00
WacDc: Wallpack, extremely stony-----	85	Very limited Stoniness Slope	1.00 1.00	Very limited Stoniness	1.00	Very limited Slope	1.00
WATER: Water-----	100	Not rated		Not rated		Not rated	
WecBc: Wellsboro, extremely stony-----	85	Very limited Stoniness	1.00	Very limited Stoniness	1.00	Somewhat limited Saturated zone Stoniness	0.19 0.16
WecCc: Wellsboro, extremely stony-----	85	Very limited Stoniness	1.00	Very limited Stoniness	1.00	Somewhat limited Slope Saturated zone Stoniness	0.63 0.19 0.16

Table 15.—Paths, Trails, and Golf Fairways—Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
WumBc: Wurtsboro, extremely stony-----	85	Very limited Stoniness Saturated zone	1.00 0.44	Very limited Stoniness Saturated zone	1.00 0.44	Somewhat limited Saturated zone	0.75
WusBc: Wurtsboro, extremely stony-----	60	Very limited Stoniness Saturated zone	1.00 0.44	Very limited Stoniness Saturated zone	1.00 0.44	Somewhat limited Saturated zone	0.75
Swartswood, extremely stony----	40	Very limited Stoniness	1.00	Very limited Stoniness	1.00	Somewhat limited Droughty	0.01
WusCc: Wurtsboro, extremely stony-----	60	Very limited Stoniness Saturated zone	1.00 0.44	Very limited Stoniness Saturated zone	1.00 0.44	Somewhat limited Saturated zone Slope	0.75 0.63
Swartswood, extremely stony----	40	Very limited Stoniness	1.00	Very limited Stoniness	1.00	Somewhat limited Slope Droughty	0.63 0.01
WusDc: Wurtsboro, extremely stony-----	80	Very limited Stoniness Slope Saturated zone	1.00 1.00 0.44	Very limited Stoniness Saturated zone	1.00 0.44	Very limited Slope Saturated zone	1.00 0.75
Swartswood, extremely stony----	20	Very limited Stoniness Slope	1.00 1.00	Very limited Stoniness	1.00	Very limited Slope Droughty	1.00 0.01

(See text for definitions of terms used in this table. Absence of an entry indicates that no rating is applicable.)

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Table 16.—Wildlife Habitat—Continued

Map symbol and soil name	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herba- ceous plants	Hard- wood trees	Conif- erous plants	Wetland plants	Shallow water areas	Open- land wild- life	Wood- land wild- life	Wetland wild- life
ChkE: Chatfield-----	Very poor	Very poor	Good	Fair	Fair	Very poor	Very poor	Very poor	Fair	Very poor
Hollis-----	Very poor	Very poor	Fair	Poor	Poor	Very poor	Very poor	Very poor	Poor	Very poor
Rock Outcrop-----	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor
ChwBc: Chippewa, extremely stony-----	Poor	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good
CorA: Colonie-----	Poor	Poor	Fair	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor
CorB: Colonie-----	Poor	Poor	Fair	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor
DefAr: Delaware, rarely flooded	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
DefBr: Delaware, rarely flooded	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
FaxC: Farmington-----	Poor	Poor	Fair	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor
Rock Outcrop-----	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor
FdwB: Farmington-----	Poor	Poor	Fair	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor
Wassaic-----	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
Rock Outcrop-----	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor
FmhAs: Fluvaquents, occasionally flooded---	Fair	Good	Good	Good	Good	Fair	Poor	Good	Good	Poor
FrdAb: Fredon, very stony-----	Poor	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good
Halsey, very stony-----	Very poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
GawEh: Galway, very rocky-----	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor

Table 16.—Wildlife Habitat—Continued

Map symbol and soil name	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herba- ceous plants	Hard- wood trees	Conif- erous plants	Wetland plants	Shallow water areas	Open- land wild- life	Wood- land wild- life	Wetland wild- life
<b>HdxAb:</b>										
Hazen, very stony-----	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
Hoosic, very stony-----	Poor	Fair	Fair	Poor	Poor	Very poor	Very poor	Fair	Poor	Very poor
<b>HdxBb:</b>										
Hazen, very stony-----	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
Hoosic, very stony-----	Poor	Fair	Fair	Poor	Poor	Very poor	Very poor	Fair	Poor	Very poor
<b>HhmBc:</b>										
Hibernia, extremely stony-----	Very poor	Very poor	Good	Good	Good	Poor	Very poor	Poor	Good	Very poor
<b>HkrgBb:</b>										
Hinckley, very stony----	Poor	Poor	Poor	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor
<b>HkrgCb:</b>										
Hinckley, very stony----	Poor	Poor	Poor	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor
<b>HncD:</b>										
Hollis-----	Very poor	Very poor	Fair	Poor	Poor	Very poor	Very poor	Very poor	Poor	Very poor
Rock Outcrop-----	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor
Chatfield-----	Very poor	Very poor	Good	Fair	Fair	Very poor	Very poor	Very poor	Fair	Very poor
<b>HonCb:</b>										
Hoosic, very stony-----	Poor	Fair	Fair	Poor	Poor	Very poor	Very poor	Fair	Poor	Very poor
Hazen, very stony-----	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
<b>HopEb:</b>										
Hoosic, very stony-----	Very poor	Poor	Fair	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor
Otisville, very stony---	Very poor	Poor	Poor	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor
<b>LacBc:</b>										
Lackawanna, extremely stony-----	Very poor	Poor	Good	Good	Good	Very poor	Very poor	Poor	Fair	Very poor
<b>LacCc:</b>										
Lackawanna, extremely stony-----	Very poor	Poor	Good	Good	Good	Very poor	Very poor	Poor	Fair	Very poor

Table 16.—Wildlife Habitat—Continued

Map symbol and soil name	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herba- ceous plants	Hard- wood trees	Conif- erous plants	Wetland plants	Shallow water areas	Open- land wild- life	Wood- land wild- life	Wetland wild- life
LacDc: Lackawanna, extremely stony-----	Very poor	Poor	Good	Good	Good	Very poor	Very poor	Poor	Fair	Very poor
LorB: Lordstown-----	Very poor	Very poor	Good	Good	Good	Very poor	Very poor	Poor	Good	Very poor
Wallpack-----	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
LorC: Lordstown-----	Very poor	Very poor	Good	Good	Good	Very poor	Very poor	Poor	Good	Very poor
Wallpack-----	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
LorCh: Lordstown, very rocky---	Very poor	Very poor	Good	Good	Good	Very poor	Very poor	Poor	Good	Very poor
Wallpack, very rocky----	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
LorD: Lordstown-----	Very poor	Very poor	Good	Good	Good	Very poor	Very poor	Poor	Good	Very poor
Wallpack-----	Very poor	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
LorDh: Lordstown, very rocky---	Very poor	Very poor	Good	Good	Good	Very poor	Very poor	Poor	Good	Very poor
Wallpack, very rocky----	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
MabEh: Manlius, very rocky-----	Very poor	Poor	Good	Fair	Fair	Very poor	Very poor	Poor	Fair	Very poor
Nassau, very rocky-----	Very poor	Poor	Fair	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor
NauBh: Nassau, very rocky-----	Poor	Poor	Fair	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor
Manlius, very rocky-----	Fair	Good	Good	Fair	Fair	Poor	Very poor	Good	Fair	Very poor
NauCh: Nassau, very rocky-----	Very poor	Very poor	Poor	Very poor	Very poor	Very poor	Very poor	Poor	Very poor	Very poor
Manlius, very rocky-----	Fair	Good	Good	Fair	Fair	Very poor	Very poor	Good	Fair	Very poor

Table 16.—Wildlife Habitat—Continued

[illegible]



Table 16.—Wildlife Habitat—Continued

Map symbol and soil name	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herba- ceous plants	Hard- wood trees	Conif- erous plants	Wetland plants	Shallow water areas	Open- land wild- life	Wood- land wild- life	Wetland wild- life
RnaF: (cont.)										
Arnot-----	Very poor	Very poor	Fair	Poor	Poor	Very poor	Very poor	Very poor	Very poor	Very poor
Rubble Land-----	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor
RnfC:										
Rock Outcrop-----	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor
Farmington-----	Poor	Poor	Fair	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor
Galway-----	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
RnFD:										
Rock Outcrop-----	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor
Farmington-----	Very poor	Poor	Fair	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor
Galway-----	Poor	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
RoefBc:										
Rockaway, thin fragipan, extremely stony-----	Very poor	Very poor	Good	Good	Good	Very poor	Very poor	Poor	Fair	Very poor
RoefCc:										
Rockaway, thin fragipan, extremely stony-----	Very poor	Very poor	Good	Good	Good	Very poor	Very poor	Poor	Fair	Very poor
RoefDc:										
Rockaway, thin fragipan, extremely stony-----	Very poor	Very poor	Good	Good	Good	Very poor	Very poor	Poor	Fair	Very poor
RokB:										
Rockaway, thin fragipan-----	Very poor	Poor	Good	Good	Good	Poor	Very poor	Poor	Good	Very poor
Chatfield-----	Very poor	Poor	Good	Fair	Fair	Very poor	Very poor	Poor	Fair	Very poor
Rock Outcrop-----	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor
RokC:										
Rockaway, thin fragipan-----	Very poor	Very poor	Good	Good	Good	Very poor	Very poor	Poor	Fair	Very poor
Chatfield-----	Very poor	Very poor	Good	Fair	Fair	Very poor	Very poor	Very poor	Fair	Very poor

Table 16.—Wildlife Habitat—Continued

Map symbol and soil name	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herba- ceous plants	Hard- wood trees	Conif- erous plants	Wetland plants	Shallow water areas	Open- land wild- life	Wood- land wild- life	Wetland wild- life
RokC: (cont.)										
Rock Outcrop-----	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor
RokD:										
Rockaway, thin fragipan-	Very poor	Very poor	Good	Good	Good	Very poor	Very poor	Poor	Fair	Very poor
Chatfield-----	Very poor	Very poor	Good	Fair	Fair	Very poor	Very poor	Very poor	Fair	Very poor
Rock Outcrop-----	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor
RooB:										
Rockaway, thin fragipan-	Very poor	Very poor	Good	Good	Good	Very poor	Very poor	Poor	Fair	Very poor
Urban Land, Rockaway thin fragipan substratum-----	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor
RooC:										
Rockaway, thin fragipan-	Very poor	Very poor	Good	Good	Good	Very poor	Very poor	Poor	Fair	Very poor
Urban Land, Rockaway thin fragipan substratum-----	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor
RooD:										
Rockaway, thin fragipan-	Very poor	Very poor	Good	Good	Good	Very poor	Very poor	Poor	Fair	Very poor
Urban Land, Rockaway thin fragipan substratum-----	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor
ScoA:										
Scio-----	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor
SwfBc:										
Swartswood, extremely stony-----	Very poor	Poor	Good	Good	Good	Poor	Very poor	Poor	Good	Very poor
SwfCc:										
Swartswood, extremely stony-----	Very poor	Poor	Good	Good	Good	Very poor	Very poor	Poor	Good	Very poor
SwfDc:										
Swartswood, extremely stony-----	Very poor	Poor	Good	Good	Good	Very poor	Very poor	Poor	Good	Very poor

Table 16.—Wildlife Habitat—Continued

[illegible]

Table 16.—Wildlife Habitat—Continued

Map symbol and soil name	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herba- ceous plants	Hard- wood trees	Conif- erous plants	Wetland plants	Shallow water areas	Open- land wild- life	Wood- land wild- life	Wetland wild- life
USFARC: (cont.)										
Farmington-----	Poor	Poor	Fair	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor
Rock Outcrop-----	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor
USFARD:										
Urban Land, Farmington substratum-----	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor
Farmington-----	Very poor	Poor	Fair	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor
Rock Outcrop-----	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor
USFAWB:										
Urban Land, Farmington substratum-----	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor
Farmington-----	Poor	Poor	Fair	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor
Wassaic-----	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
USHAZA:										
Urban Land, Hazen substratum-----	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor
Hazen-----	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
Hoosic-----	Poor	Fair	Fair	Poor	Poor	Very poor	Very poor	Fair	Poor	Very poor
USHAZB:										
Urban Land, Hazen substratum-----	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor
Hazen-----	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
Hoosic-----	Poor	Fair	Fair	Poor	Poor	Very poor	Very poor	Fair	Poor	Very poor
USNAMB:										
Urban Land, Nassau substratum-----	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor
USNAMB:										
Nassau-----	Poor	Poor	Fair	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor

Table 16.—Wildlife Habitat—Continued

Map symbol and soil name	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herba- ceous plants	Hard- wood trees	Conif- erous plants	Wetland plants	Shallow water areas	Open- land wild- life	Wood- land wild- life	Wetland wild- life
USNAMB: (cont.)										
Manlius-----	Fair	Good	Good	Fair	Fair	Poor	Very poor	Good	Fair	Very poor
USNAMC:										
Urban Land, Nassau substratum-----	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor
Nassau-----	Very poor	Very poor	Poor	Very poor	Very poor	Very poor	Very poor	Poor	Very poor	Very poor
Manlius-----	Fair	Good	Good	Fair	Fair	Very poor	Very poor	Good	Fair	Very poor
USNAMD:										
Urban Land, Nassau substratum-----	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor
Nassau-----	Poor	Poor	Fair	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor
Manlius-----	Poor	Fair	Good	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor
USWUSB:										
Urban Land, Wurtsboro substratum-----	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor
Wurtsboro-----	Very poor	Poor	Good	Fair	Fair	Poor	Very poor	Poor	Fair	Very poor
Swartswood-----	Very poor	Poor	Good	Good	Good	Poor	Very poor	Poor	Good	Very poor
VepBc:										
Venango, extremely stony	Very poor	Poor	Good	Good	Good	Poor	Very poor	Poor	Good	Very poor
VepCc:										
Venango, extremely stony	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
WaahAt:										
Wallkill, frequently flooded-----	Very poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
WabBb:										
Wallpack, aeolian mantle, very stony----	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
WabCb:										
Wallpack, aeolian mantle, very stony----	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor

Table 16.—Wildlife Habitat—Continued

Map symbol and soil name	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herba- ceous plants	Hard- wood trees	Conif- erous plants	Wetland plants	Shallow water areas	Open- land wild- life	Wood- land wild- life	Wetland wild- life
WabDb: Wallpack, aeolian mantle, very stony-----	Poor	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
WacB: Wallpack-----	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
WacBc: Wallpack, extremely stony-----	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
WacC: Wallpack-----	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
WacCc: Wallpack, extremely stony-----	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
WacD: Wallpack-----	Very poor	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
WacDc: Wallpack, extremely stony-----	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
WATER: Water, greater than 40 acres	---	---	---	---	---	---	---	---	---	
WecBc: Wellsboro, extremely stony-----	Very poor	Poor	Good	Good	Good	Very poor	Very poor	Poor	Good	Very poor
WecCc: Wellsboro, extremely stony-----	Very poor	Poor	Good	Good	Good	Very poor	Very poor	Poor	Good	Very poor
WumBc: Wurtsboro, extremely stony-----	Very poor	Poor	Good	Fair	Fair	Poor	Very poor	Poor	Fair	Very poor
WusBc: Wurtsboro, extremely stony-----	Very poor	Poor	Good	Fair	Fair	Poor	Very poor	Poor	Fair	Very poor
Swartswood, extremely stony-----	Very poor	Poor	Good	Good	Good	Poor	Very poor	Poor	Good	Very poor

Table 16.—Wildlife Habitat—Continued

Map symbol and soil name	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herba- ceous plants	Hard- wood trees	Conif- erous plants	Wetland plants	Shallow water areas	Open- land wild- life	Wood- land wild- life	Wetland wild- life
WusCc:										
Wurtsboro, extremely stony-----	Very poor	Poor	Good	Fair	Fair	Very poor	Very poor	Poor	Fair	Very poor
Swartswood, extremely stony-----	Very poor	Poor	Good	Good	Good	Very poor	Very poor	Poor	Good	Very poor
WusDc:										
Wurtsboro, extremely stony-----	Very poor	Poor	Good	Fair	Fair	Very poor	Very poor	Poor	Fair	Very poor
Swartswood, extremely stony-----	Very poor	Poor	Good	Good	Good	Very poor	Very poor	Poor	Good	Very poor

Table 17.—Dwellings and Small Commercial Buildings

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
AhbBc: Alden, extremely stony-----	90	Very limited Ponding Saturated zone	1.00 1.00	Very limited Ponding Saturated zone	1.00 1.00	Very limited Ponding Saturated zone	1.00 1.00
AhcBc: Alden, gneiss till substratum, extremely stony----	90	Very limited Ponding Saturated zone	1.00 1.00	Very limited Ponding Saturated zone	1.00 1.00	Very limited Ponding Saturated zone	1.00 1.00
AruCh: Arnot, very rocky---	55	Very limited Depth to bedrock Slope	1.00 0.01	Very limited Depth to bedrock Slope	1.00 0.01	Very limited Depth to bedrock Slope	1.00 1.00
Lordstown, very rocky-----	40	Somewhat limited Depth to bedrock Slope	0.06 0.01	Very limited Depth to bedrock Slope	1.00 0.01	Very limited Slope Depth to bedrock	1.00 0.06
ArvD: Arnot-----	45	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Slope Depth to bedrock	1.00 1.00
Lordstown-----	40	Very limited Slope Depth to bedrock	1.00 0.06	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Slope Depth to bedrock	1.00 0.06
Rock outcrop-----	15	Not rated		Not rated		Not rated	
ArvE: Arnot-----	60	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Slope Depth to bedrock	1.00 1.00
Lordstown-----	25	Very limited Slope Depth to bedrock	1.00 0.06	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Slope Depth to bedrock	1.00 0.06
Rock outcrop-----	15	Not rated		Not rated		Not rated	
AtcA: Atherton, very poorly drained-----	60	Very limited Ponding Saturated zone	1.00 1.00	Very limited Ponding Saturated zone	1.00 1.00	Very limited Ponding Saturated zone	1.00 1.00
Atherton, poorly drained-----	30	Very limited Saturated zone	1.00	Very limited Saturated zone	1.00	Very limited Saturated zone	1.00



Table 17.—Dwellings and Small Commercial Buildings—Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
CatbA: Catden-----	85	Very limited Ponding Saturated zone Organic matter content	1.00 1.00 1.00	Very limited Ponding Saturated zone Organic matter content	1.00 1.00 1.00	Very limited Ponding Saturated zone Organic matter content	1.00 1.00 1.00
ChkC: Chatfield-----	45	Somewhat limited Depth to bedrock Slope	0.46 0.01	Very limited Depth to bedrock Slope	1.00 0.01	Very limited Slope Depth to bedrock	1.00 0.46
Hollis-----	30	Very limited Depth to bedrock Slope	1.00 0.01	Very limited Depth to bedrock Slope	1.00 0.01	Very limited Depth to bedrock Slope	1.00 1.00
Rock outcrop-----	25	Not rated		Not rated		Not rated	
ChkE: Chatfield-----	45	Very limited Slope Depth to bedrock	1.00 0.46	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Slope Depth to bedrock	1.00 0.46
Hollis-----	30	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Slope Depth to bedrock	1.00 1.00
Rock outcrop-----	20	Not rated		Not rated		Not rated	
ChwBc: Chippewa, extremely stony-----	80	Very limited Ponding Saturated zone	1.00 1.00	Very limited Ponding Saturated zone	1.00 1.00	Very limited Ponding Saturated zone	1.00 1.00
CorA: Colonie-----	80	Not limited		Not limited		Not limited	
CorB: Colonie-----	80	Not limited		Not limited		Somewhat limited Slope	0.50
DefAr: Delaware, rarely flooded-----	80	Very limited Flooding	1.00	Very limited Flooding	1.00	Very limited Flooding	1.00
DefBr: Delaware, rarely flooded-----	80	Very limited Flooding	1.00	Very limited Flooding	1.00	Very limited Flooding Slope	1.00 0.50
FaxC: Farmington-----	50	Very limited Depth to bedrock Slope	1.00 0.01	Very limited Depth to bedrock Slope	1.00 0.01	Very limited Depth to bedrock Slope	1.00 1.00
Rock outcrop-----	40	Not rated		Not rated		Not rated	

Table 17.—Dwellings and Small Commercial Buildings—Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
<b>FdwB:</b>							
Farmington-----	40	Very limited Depth to bedrock	1.00	Very limited Depth to bedrock	1.00	Very limited Depth to bedrock	1.00
Wassaic-----	30	Somewhat limited Depth to bedrock	0.64	Very limited Depth to bedrock	1.00	Somewhat limited Depth to bedrock	0.64
Rock outcrop-----	25	Not rated		Not rated		Not rated	
<b>FmhAs:</b>							
Fluvaquents, occasionally flooded-----	90	Very limited Flooding Saturated zone	1.00 1.00	Very limited Flooding Saturated zone	1.00 1.00	Very limited Flooding Saturated zone	1.00 1.00
<b>FrdAb:</b>							
Fredon, very stony--	45	Very limited Saturated zone	1.00	Very limited Saturated zone	1.00	Very limited Saturated zone	1.00
Halsey, very stony--	40	Very limited Ponding Saturated zone	1.00 1.00	Very limited Ponding Saturated zone	1.00 1.00	Very limited Ponding Saturated zone	1.00 1.00
<b>GawEh:</b>							
Galway, very rocky--	80	Very limited Slope Depth to bedrock	1.00 0.90	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Slope Depth to bedrock	1.00 0.90
<b>HdxAb:</b>							
Hazen, very stony---	50	Not limited		Not limited		Not limited	
Hoosic, very stony--	40	Not limited		Not limited		Not limited	
<b>HdxBb:</b>							
Hazen, very stony---	60	Not limited		Not limited		Somewhat limited Slope	0.50
Hoosic, very stony--	35	Not limited		Not limited		Somewhat limited Slope	0.50
<b>HhmBc:</b>							
Hibernia, extremely stony-----	80	Very limited Saturated zone	1.00	Very limited Saturated zone	1.00	Very limited Saturated zone	1.00
<b>HkrgBb:</b>							
Hinckley, very stony	85	Somewhat limited Rock fragments	0.27	Somewhat limited Rock fragments	0.27	Somewhat limited Slope Rock fragments	0.50 0.27
<b>HkrgCb:</b>							
Hinckley, very stony	85	Somewhat limited Slope Rock fragments	0.63 0.27	Somewhat limited Slope Rock fragments	0.63 0.27	Very limited Slope Rock fragments	1.00 0.27
<b>HncD:</b>							
Hollis-----	45	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Slope Depth to bedrock	1.00 1.00
Rock outcrop-----	30	Not rated		Not rated		Not rated	

Table 17.—Dwellings and Small Commercial Buildings—Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
HncD: (cont.)							
Chatfield-----	20	Very limited Slope Depth to bedrock	1.00 0.46	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Slope Depth to bedrock	1.00 0.46
HonCb:							
Hoosic, very stony--	60	Somewhat limited Slope	0.63	Somewhat limited Slope	0.63	Very limited Slope	1.00
Hazen, very stony---	30	Somewhat limited Slope	0.63	Somewhat limited Slope	0.63	Very limited Slope	1.00
HopEb:							
Hoosic, very stony--	50	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
Otisville, very stony-----	40	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
LacBc:							
Lackawanna, extremely stony----	85	Not limited		Not limited		Not limited	
LacCc:							
Lackawanna, extremely stony----	85	Somewhat limited Slope	0.63	Somewhat limited Slope	0.63	Very limited Slope	1.00
LacDc:							
Lackawanna, extremely stony----	85	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
LorB:							
Lordstown-----	50	Somewhat limited Depth to bedrock	0.06	Very limited Depth to bedrock	1.00	Somewhat limited Depth to bedrock	0.06
Wallpack-----	35	Not limited		Not limited		Not limited	
LorC:							
Lordstown-----	50	Somewhat limited Slope Depth to bedrock	0.63 0.06	Very limited Depth to bedrock Slope	1.00 0.63	Very limited Slope Depth to bedrock	1.00 0.06
Wallpack-----	35	Somewhat limited Slope	0.63	Somewhat limited Slope	0.63	Very limited Slope	1.00
LorCh:							
Lordstown, very rocky-----	50	Somewhat limited Slope Depth to bedrock	0.63 0.06	Very limited Depth to bedrock Slope	1.00 0.63	Very limited Slope Depth to bedrock	1.00 0.06
Wallpack, very rocky	35	Somewhat limited Slope	0.63	Somewhat limited Slope	0.63	Very limited Slope	1.00

Table 17.—Dwellings and Small Commercial Buildings—Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
LorD:							
Lordstown-----	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to bedrock	0.06	Depth to bedrock	1.00	Depth to bedrock	0.06
Wallpack-----	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
LorDh:							
Lordstown, very rocky-----	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to bedrock	0.06	Depth to bedrock	1.00	Depth to bedrock	0.06
Wallpack, very rocky	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
MabEh:							
Manlius, very rocky-	60	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to bedrock	0.71	Depth to bedrock	1.00	Depth to bedrock	0.71
		Rock fragments	0.42	Rock fragments	0.42	Rock fragments	0.42
Nassau, very rocky--	25	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Rock fragments	0.39	Rock fragments	0.39	Rock fragments	0.39
NauBh:							
Nassau, very rocky--	50	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Rock fragments	0.15	Rock fragments	0.15	Rock fragments	0.15
Manlius, very rocky-	45	Somewhat limited		Very limited		Somewhat limited	
		Depth to bedrock	0.54	Depth to bedrock	1.00	Depth to bedrock	0.54
		Rock fragments	0.33	Rock fragments	0.33	Rock fragments	0.33
NauCh:							
Nassau, very rocky--	55	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Slope	0.63	Slope	0.63	Depth to bedrock	1.00
		Rock fragments	0.15	Rock fragments	0.15	Rock fragments	0.15
Manlius, very rocky-	40	Somewhat limited		Very limited		Very limited	
		Slope	0.63	Depth to bedrock	1.00	Slope	1.00
		Depth to bedrock	0.54	Slope	0.63	Depth to bedrock	0.54
		Rock fragments	0.33	Rock fragments	0.33	Rock fragments	0.33
NauDh:							
Nassau, very rocky--	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Rock fragments	0.15	Rock fragments	0.15	Rock fragments	0.15
Manlius, very rocky-	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to bedrock	0.54	Depth to bedrock	1.00	Depth to bedrock	0.54
		Rock fragments	0.33	Rock fragments	0.33	Rock fragments	0.33

Table 17.—Dwellings and Small Commercial Buildings—Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
NavE:							
Nassau-----	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Rock fragments	0.39	Rock fragments	0.39	Rock fragments	0.39
Rock outcrop-----	45	Not rated		Not rated		Not rated	
OpnCh:							
Oquaga, very rocky--	55	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.84	Depth to bedrock	1.00	Slope	1.00
		Slope	0.63	Slope	0.63	Depth to bedrock	0.84
		Rock fragments	0.01	Rock fragments	0.01	Rock fragments	0.01
Lackawanna, very rocky-----	30	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.63	Slope	0.63	Slope	1.00
OpnDh:							
Oquaga, very rocky--	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to bedrock	0.84	Depth to bedrock	1.00	Depth to bedrock	0.84
		Rock fragments	0.01	Rock fragments	0.01	Rock fragments	0.01
Lackawanna, very rocky-----	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
OprC:							
Oquaga-----	75	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.84	Depth to bedrock	1.00	Slope	1.00
		Rock fragments	0.01	Rock fragments	0.01	Depth to bedrock	0.84
		Slope	0.01	Slope	0.01	Rock fragments	0.01
Rock outcrop-----	15	Not rated		Not rated		Not rated	
OprE:							
Oquaga-----	60	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to bedrock	0.84	Depth to bedrock	1.00	Depth to bedrock	0.84
		Rock fragments	0.01	Rock fragments	0.01	Rock fragments	0.01
Rock outcrop-----	25	Not rated		Not rated		Not rated	
PHG:							
Pits, sand and gravel-----	95	Not rated		Not rated		Not rated	
PohA:							
Pompton-----	80	Very limited		Very limited		Very limited	
		Saturated zone	1.00	Saturated zone	1.00	Saturated zone	1.00
QY:							
Pits, quarry-----	100	Not rated		Not rated		Not rated	
RkrB:							
Riverhead-----	85	Not limited		Somewhat limited		Somewhat limited	
				Saturated zone	0.99	Slope	0.12

Table 17.—Dwellings and Small Commercial Buildings—Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
RnaF:							
Rock outcrop-----	40	Not rated		Not rated		Not rated	
Arnot-----	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
Rubble land-----	20	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Rock fragments	1.00	Rock fragments	1.00	Rock fragments	1.00
RnfC:							
Rock outcrop-----	40	Not rated		Not rated		Not rated	
Farmington-----	35	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Slope	0.63	Slope	0.63	Depth to bedrock	1.00
Galway-----	25	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.90	Depth to bedrock	1.00	Slope	1.00
		Slope	0.63	Slope	0.63	Depth to bedrock	0.90
RnFD:							
Rock outcrop-----	50	Not rated		Not rated		Not rated	
Farmington-----	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
Galway-----	10	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to bedrock	0.90	Depth to bedrock	1.00	Depth to bedrock	0.90
RoefBc:							
Rockaway, thin fragipan, extremely stony-----	85	Not limited		Not limited		Not limited	
RoefCc:							
Rockaway, thin fragipan, extremely stony-----	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.63	Slope	0.63	Slope	1.00
RoefDc:							
Rockaway, thin fragipan, extremely stony-----	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
RokB:							
Rockaway, thin fragipan-----	50	Not limited		Not limited		Not limited	
Chatfield-----	30	Somewhat limited		Very limited		Somewhat limited	
		Depth to bedrock	0.46	Depth to bedrock	1.00	Depth to bedrock	0.46
Rock outcrop-----	20	Not rated		Not rated		Not rated	

Table 17.—Dwellings and Small Commercial Buildings—Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
RokC: Rockaway, thin fragipan-----	45	Somewhat limited Slope	0.63	Somewhat limited Slope	0.63	Very limited Slope	1.00
Chatfield-----	40	Somewhat limited Slope Depth to bedrock	0.63 0.46	Very limited Depth to bedrock Slope	1.00 0.63	Very limited Slope Depth to bedrock	1.00 0.46
Rock outcrop-----	15	Not rated		Not rated		Not rated	
RokD: Rockaway, thin fragipan-----	45	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
Chatfield-----	25	Very limited Slope Depth to bedrock	1.00 0.46	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Slope Depth to bedrock	1.00 0.46
Rock outcrop-----	20	Not rated		Not rated		Not rated	
RooB: Rockaway, thin fragipan-----	50	Not limited		Not limited		Not limited	
Urban land, Rockaway thin fragipan substratum-----	40	Not limited		Not limited		Not limited	
RooC: Rockaway, thin fragipan-----	45	Somewhat limited Slope	0.63	Somewhat limited Slope	0.63	Very limited Slope	1.00
Urban land, Rockaway thin fragipan substratum-----	40	Not limited		Not limited		Not limited	
RooD: Rockaway, thin fragipan-----	45	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
Urban land, Rockaway thin fragipan substratum-----	40	Not limited		Not limited		Not limited	
ScoA: Scio-----	80	Somewhat limited Saturated zone	0.77	Very limited Saturated zone	1.00	Somewhat limited Saturated zone	0.77
SwfBc: Swartswood, extremely stony----	90	Not limited		Not limited		Not limited	
SwfCc: Swartswood, extremely stony----	90	Somewhat limited Slope	0.63	Somewhat limited Slope	0.63	Very limited Slope	1.00

Table 17.—Dwellings and Small Commercial Buildings—Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
SwfDc: Swartswood, extremely stony-----	85	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
UccAs: Udifluvents, occasionally flooded-----	90	Very limited Flooding	1.00	Very limited Flooding Saturated zone	1.00 0.87	Very limited Flooding	1.00
UdaB: Udorthents-----	100	Not limited		Not limited		Not limited	
UdaB: Udorthents-----	60	Not limited		Not limited		Not limited	
Urban land-----	40	Not rated		Not rated		Not rated	
UnfA: Unadilla-----	80	Not limited		Not limited		Not limited	
UnfB: Unadilla-----	80	Not limited		Not limited		Somewhat limited Slope	0.50
USCHRB: Urban land, Chatfield substratum-----	40	Somewhat limited Depth to bedrock	0.46	Very limited Depth to bedrock	1.00	Somewhat limited Depth to bedrock	0.46
Chatfield-----	25	Somewhat limited Depth to bedrock	0.46	Very limited Depth to bedrock	1.00	Somewhat limited Depth to bedrock	0.46
Rock outcrop-----	20	Not rated		Not rated		Not rated	
USCHRC: Urban land, Chatfield substratum-----	40	Somewhat limited Depth to bedrock	0.46	Very limited Depth to bedrock	1.00	Somewhat limited Depth to bedrock	0.46
Chatfield-----	25	Somewhat limited Slope Depth to bedrock	0.63 0.46	Very limited Depth to bedrock Slope	1.00 0.63	Very limited Slope Depth to bedrock	1.00 0.46
Rock outcrop-----	20	Not rated		Not rated		Not rated	
USCHRD: Urban land, Chatfield substratum-----	40	Somewhat limited Depth to bedrock	0.46	Very limited Depth to bedrock	1.00	Somewhat limited Depth to bedrock	0.46
Chatfield-----	25	Very limited Slope Depth to bedrock	1.00 0.46	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Slope Depth to bedrock	1.00 0.46



Table 17.—Dwellings and Small Commercial Buildings—Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
USCHRD: (cont.)							
Rock outcrop-----	20	Not rated		Not rated		Not rated	
USFARC:							
Urban land, Farmington substratum-----	50	Very limited Depth to bedrock	1.00	Very limited Depth to bedrock	1.00	Very limited Depth to bedrock	1.00
Farmington-----	30	Very limited Depth to bedrock Slope	1.00 0.63	Very limited Depth to bedrock Slope	1.00 0.63	Very limited Slope Depth to bedrock	1.00 1.00
Rock outcrop-----	20	Not rated		Not rated		Not rated	
USFARD:							
Urban land, Farmington substratum-----	40	Very limited Depth to bedrock	1.00	Very limited Depth to bedrock	1.00	Very limited Depth to bedrock	1.00
Farmington-----	35	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Slope Depth to bedrock	1.00 1.00
Rock outcrop-----	25	Not rated		Not rated		Not rated	
USFAWB:							
Urban land, Farmington substratum-----	50	Very limited Depth to bedrock	1.00	Very limited Depth to bedrock	1.00	Very limited Depth to bedrock	1.00
Farmington-----	30	Very limited Depth to bedrock	1.00	Very limited Depth to bedrock	1.00	Very limited Depth to bedrock	1.00
Wassaic-----	20	Somewhat limited Depth to bedrock	0.64	Very limited Depth to bedrock	1.00	Somewhat limited Depth to bedrock	0.64
USHAZA:							
Urban land, Hazen substratum-----	45	Not limited		Not limited		Not limited	
Hazen-----	35	Not limited		Not limited		Not limited	
Hoosic-----	20	Not limited		Not limited		Not limited	
USHAZB:							
Urban land, Hazen substratum-----	55	Not limited		Not limited		Not limited	
Hazen-----	25	Not limited		Not limited		Somewhat limited Slope	0.50
Hoosic-----	20	Not limited		Not limited		Somewhat limited Slope	0.50

Table 17.—Dwellings and Small Commercial Buildings—Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
USNAMB:							
Urban land, Nassau substratum-----	45	Very limited Depth to bedrock	1.00	Very limited Depth to bedrock	1.00	Very limited Depth to bedrock	1.00
Nassau-----	30	Very limited Depth to bedrock Rock fragments	1.00 0.15	Very limited Depth to bedrock Rock fragments	1.00 0.15	Very limited Depth to bedrock Rock fragments	1.00 0.15
Manlius-----	25	Somewhat limited Depth to bedrock Rock fragments	0.54 0.33	Very limited Depth to bedrock Rock fragments	1.00 0.33	Somewhat limited Depth to bedrock Rock fragments	0.54 0.33
USNAMC:							
Urban land, Nassau substratum-----	55	Very limited Depth to bedrock	1.00	Very limited Depth to bedrock	1.00	Very limited Depth to bedrock	1.00
Nassau-----	25	Very limited Depth to bedrock Slope Rock fragments	1.00 0.63 0.15	Very limited Depth to bedrock Slope Rock fragments	1.00 0.63 0.15	Very limited Slope Depth to bedrock Rock fragments	1.00 1.00 0.15
Manlius-----	20	Somewhat limited Slope Depth to bedrock Rock fragments	0.63 0.54 0.33	Very limited Depth to bedrock Slope Rock fragments	1.00 0.63 0.33	Very limited Slope Depth to bedrock Rock fragments	1.00 0.54 0.33
USNAMD:							
Urban land, Nassau substratum-----	60	Very limited Depth to bedrock	1.00	Very limited Depth to bedrock	1.00	Very limited Depth to bedrock	1.00
Nassau-----	25	Very limited Slope Depth to bedrock Rock fragments	1.00 1.00 0.15	Very limited Slope Depth to bedrock Rock fragments	1.00 1.00 0.15	Very limited Slope Depth to bedrock Rock fragments	1.00 1.00 0.15
Manlius-----	15	Very limited Slope Depth to bedrock Rock fragments	1.00 0.54 0.33	Very limited Slope Depth to bedrock Rock fragments	1.00 1.00 0.33	Very limited Slope Depth to bedrock Rock fragments	1.00 0.54 0.33
USWUSB:							
Urban land, Wurtsboro substratum-----	45	Somewhat limited Saturated zone	0.98	Very limited Saturated zone	1.00	Somewhat limited Saturated zone	0.98
Wurtsboro-----	35	Somewhat limited Saturated zone	0.98	Very limited Saturated zone	1.00	Somewhat limited Saturated zone	0.98
Swartswood-----	20	Not limited		Not limited		Not limited	
VepBc:							
Venango, extremely stony-----	90	Very limited Saturated zone	1.00	Very limited Saturated zone	1.00	Very limited Saturated zone	1.00

Table 17.—Dwellings and Small Commercial Buildings—Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
VepCc: Venango, extremely stony-----	85	Very limited Saturated zone Slope	1.00 0.63	Very limited Saturated zone Slope	1.00 0.63	Very limited Slope Saturated zone	1.00 1.00
WaahAt: Wallkill, frequently flooded-----	90	Very limited Ponding Flooding Saturated zone Organic matter content	1.00 1.00 1.00 1.00	Very limited Ponding Flooding Saturated zone Organic matter content	1.00 1.00 1.00 1.00	Very limited Ponding Flooding Saturated zone Organic matter content	1.00 1.00 1.00 1.00
WabBb: Wallpack, aeolian mantle, very stony-	85	Not limited		Not limited		Not limited	
WabCb: Wallpack, aeolian mantle, very stony-	85	Somewhat limited Slope	0.63	Somewhat limited Slope	0.63	Very limited Slope	1.00
WabDb: Wallpack, aeolian mantle, very stony-	85	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
WacB: Wallpack-----	85	Not limited		Not limited		Not limited	
WacBc: Wallpack, extremely stony-----	85	Not limited		Not limited		Not limited	
WacC: Wallpack-----	85	Somewhat limited Slope	0.63	Somewhat limited Slope	0.63	Very limited Slope	1.00
WacCc: Wallpack, extremely stony-----	85	Somewhat limited Slope	0.63	Somewhat limited Slope	0.63	Very limited Slope	1.00
WacD: Wallpack-----	85	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
WacDc: Wallpack, extremely stony-----	85	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
WATER: Water-----	100	Not rated		Not rated		Not rated	

Table 17.—Dwellings and Small Commercial Buildings—Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
WecBc: Wellsboro, extremely stony-----	85	Somewhat limited Saturated zone	0.39	Very limited Saturated zone	1.00	Somewhat limited Saturated zone	0.39
WecCc: Wellsboro, extremely stony-----	85	Somewhat limited Slope Saturated zone	0.63 0.39	Very limited Saturated zone Slope	1.00 0.63	Very limited Slope Saturated zone	1.00 0.39
WumBc: Wurtsboro, extremely stony-----	85	Somewhat limited Saturated zone	0.98	Very limited Saturated zone	1.00	Somewhat limited Saturated zone	0.98
WusBc: Wurtsboro, extremely stony-----	60	Somewhat limited Saturated zone	0.98	Very limited Saturated zone	1.00	Somewhat limited Saturated zone	0.98
Swartswood, extremely stony----	40	Not limited		Not limited		Not limited	
WusCc: Wurtsboro, extremely stony-----	60	Somewhat limited Saturated zone Slope	0.98 0.63	Very limited Saturated zone Slope	1.00 0.63	Very limited Slope Saturated zone	1.00 0.98
Swartswood, extremely stony----	40	Somewhat limited Slope	0.63	Somewhat limited Slope	0.63	Very limited Slope	1.00
WusDc: Wurtsboro, extremely stony-----	80	Very limited Slope Saturated zone	1.00 0.98	Very limited Slope Saturated zone	1.00 1.00	Very limited Slope Saturated zone	1.00 0.98
Swartswood, extremely stony----	20	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00

Table 18.—Roads and Streets, Shallow Excavations, and Lawns and Landscaping

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
AhbBc: Alden, extremely stony-----	90	Very limited Ponding Saturated zone Frost action Low strength	 1.00 1.00 1.00 1.00	Very limited Ponding Saturated zone Cutbanks cave	 1.00 1.00 0.10	Very limited Ponding Saturated zone	 1.00 1.00
AhcBc: Alden, gneiss till substratum, extremely stony----	90	Very limited Ponding Saturated zone Frost action Low strength	 1.00 1.00 1.00 1.00	Very limited Ponding Saturated zone Cutbanks cave	 1.00 1.00 0.10	Very limited Ponding Saturated zone	 1.00 1.00
AruCh: Arnot, very rocky---	55	Very limited Depth to bedrock Frost action Slope	 1.00 0.50 0.01	Very limited Depth to bedrock Slope	 1.00 0.01	Very limited Depth to bedrock Droughty Slope	 1.00 0.99 0.01
Lordstown, very rocky-----	40	Somewhat limited Frost action Depth to bedrock Slope	 0.50 0.06 0.01	Very limited Depth to bedrock Cutbanks cave Slope	 1.00 1.00 0.01	Somewhat limited Depth to bedrock Slope	 0.06 0.01
ArvD: Arnot-----	45	Very limited Depth to bedrock Slope Frost action	 1.00 1.00 0.50	Very limited Depth to bedrock Slope	 1.00 1.00	Very limited Depth to bedrock Slope Droughty	 1.00 1.00 0.99
Lordstown-----	40	Very limited Slope Frost action Depth to bedrock	 1.00 0.50 0.06	Very limited Depth to bedrock Slope Cutbanks cave	 1.00 1.00 1.00	Very limited Slope Depth to bedrock	 1.00 0.06
Rock outcrop-----	15	Not rated		Not rated		Not rated	
ArvE: Arnot-----	60	Very limited Depth to bedrock Slope Frost action	 1.00 1.00 0.50	Very limited Depth to bedrock Slope	 1.00 1.00	Very limited Depth to bedrock Slope Droughty	 1.00 1.00 0.99
Lordstown-----	25	Very limited Slope Frost action Depth to bedrock	 1.00 0.50 0.06	Very limited Depth to bedrock Slope Cutbanks cave	 1.00 1.00 1.00	Very limited Slope Depth to bedrock	 1.00 0.06
Rock outcrop-----	15	Not rated		Not rated		Not rated	

Table 18.—Roads and Streets, Shallow Excavations, and Lawns and Landscaping—Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
AtcA: Atherton, very poorly drained-----	60	Very limited Ponding Saturated zone Frost action Low strength	 1.00 1.00 1.00 1.00	Very limited Ponding Saturated zone Cutbanks cave	 1.00 1.00 0.10	Very limited Ponding Saturated zone	 1.00 1.00
Atherton, poorly drained-----	30	Very limited Saturated zone Frost action Low strength	 1.00 1.00 1.00	Very limited Saturated zone Cutbanks cave	 1.00 0.10	Very limited Saturated zone	 1.00
CatbA: Catden-----	85	Very limited Ponding Saturated zone Frost action	 1.00 1.00 1.00	Very limited Ponding Saturated zone Organic matter content	 1.00 1.00 1.00	Very limited Ponding Saturated zone	 1.00 1.00
ChkC: Chatfield-----	45	Somewhat limited Frost action Depth to bedrock Slope	 0.50 0.46 0.01	Very limited Depth to bedrock Cutbanks cave Slope	 1.00 0.10 0.01	Somewhat limited Depth to bedrock Slope	 0.46 0.01
Hollis-----	30	Very limited Depth to bedrock Frost action Slope	 1.00 0.50 0.01	Very limited Depth to bedrock Slope	 1.00 0.01	Very limited Depth to bedrock Droughty Slope	 1.00 0.58 0.01
Rock outcrop-----	25	Not rated		Not rated		Not rated	
ChkE: Chatfield-----	45	Very limited Slope Frost action Depth to bedrock	 1.00 0.50 0.46	Very limited Depth to bedrock Slope Cutbanks cave	 1.00 1.00 0.10	Very limited Slope Depth to bedrock	 1.00 0.46
Hollis-----	30	Very limited Depth to bedrock Slope Frost action	 1.00 1.00 0.50	Very limited Depth to bedrock Slope	 1.00 1.00	Very limited Depth to bedrock Slope Droughty	 1.00 1.00 0.58
Rock outcrop-----	20	Not rated		Not rated		Not rated	
ChwBc: Chippewa, extremely stony-----	80	Very limited Ponding Saturated zone Frost action Low strength	 1.00 1.00 1.00 1.00	Very limited Ponding Saturated zone Fragipan Cutbanks cave	 1.00 1.00 0.50 0.10	Very limited Ponding Saturated zone Droughty	 1.00 1.00 0.49
CorA: Colonie-----	80	Not limited		Very limited Cutbanks cave	 1.00	Somewhat limited Droughty	 0.47

Table 18.—Roads and Streets, Shallow Excavations, and Lawns and Landscaping—Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
CorB: Colonie-----	80	Not limited		Very limited Cutbanks cave	1.00	Somewhat limited Droughty	0.47
DefAr: Delaware, rarely flooded-----	80	Somewhat limited Frost action Flooding	0.50 0.40	Somewhat limited Cutbanks cave	0.10	Not limited	
DefBr: Delaware, rarely flooded-----	80	Somewhat limited Frost action Flooding	0.50 0.40	Somewhat limited Cutbanks cave	0.10	Not limited	
FaxC: Farmington-----	50	Very limited Depth to bedrock Frost action Slope	1.00 0.50 0.01	Very limited Depth to bedrock Slope	1.00 0.01	Very limited Depth to bedrock Droughty Slope	1.00 0.97 0.01
Rock outcrop-----	40	Not rated		Not rated		Not rated	
FdwB: Farmington-----	40	Very limited Depth to bedrock Frost action	1.00 0.50	Very limited Depth to bedrock	1.00	Very limited Depth to bedrock Droughty	1.00 0.97
Wassaic-----	30	Very limited Low strength Depth to bedrock Frost action	1.00 0.64 0.50	Very limited Depth to bedrock Cutbanks cave	1.00 0.10	Somewhat limited Depth to bedrock	0.65
Rock outcrop-----	25	Not rated		Not rated		Not rated	
FmhAs: Fluvaquents, occasionally flooded-----	90	Very limited Saturated zone Frost action Flooding	1.00 1.00 1.00	Very limited Saturated zone Flooding Cutbanks cave	1.00 0.60 0.10	Very limited Saturated zone Flooding	1.00 0.60
FrdAb: Fredon, very stony--	45	Very limited Frost action Saturated zone	1.00 0.96	Very limited Saturated zone Cutbanks cave	1.00 1.00	Somewhat limited Saturated zone	0.96
Halsey, very stony--	40	Very limited Ponding Saturated zone Frost action	1.00 1.00 1.00	Very limited Ponding Saturated zone Cutbanks cave	1.00 1.00 1.00	Very limited Ponding Saturated zone	1.00 1.00
GawEh: Galway, very rocky--	80	Very limited Slope Depth to bedrock Frost action	1.00 0.90 0.50	Very limited Depth to bedrock Slope Cutbanks cave	1.00 1.00 1.00	Very limited Slope Depth to bedrock Droughty	1.00 0.90 0.01

Table 18.—Roads and Streets, Shallow Excavations, and Lawns and Landscaping—Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
HdxAb:							
Hazen, very stony---	50	Somewhat limited Frost action	0.50	Very limited Cutbanks cave	1.00	Somewhat limited Droughty	0.01
Hoosic, very stony--	40	Not limited		Very limited Cutbanks cave	1.00	Somewhat limited Droughty	0.10
HdxBb:							
Hazen, very stony---	60	Somewhat limited Frost action	0.50	Very limited Cutbanks cave	1.00	Somewhat limited Droughty	0.01
Hoosic, very stony--	35	Not limited		Very limited Cutbanks cave	1.00	Somewhat limited Droughty	0.10
HhmBc:							
Hibernia, extremely stony-----	80	Very limited Saturated zone Frost action	1.00 1.00	Very limited Saturated zone Cutbanks cave	1.00 1.00	Very limited Saturated zone	1.00
HkrgBb:							
Hinckley, very stony	85	Somewhat limited Rock fragments	0.27	Very limited Cutbanks cave Rock fragments	1.00 0.27	Very limited Droughty	1.00
HkrgCb:							
Hinckley, very stony	85	Somewhat limited Slope Rock fragments	0.63 0.27	Very limited Cutbanks cave Slope Rock fragments	1.00 0.63 0.27	Very limited Droughty Slope	1.00 0.63
HncD:							
Hollis-----	45	Very limited Depth to bedrock Slope Frost action	1.00 1.00 0.50	Very limited Depth to bedrock Slope	1.00 1.00	Very limited Depth to bedrock Slope Droughty	1.00 1.00 0.58
Rock outcrop-----	30	Not rated		Not rated		Not rated	
Chatfield-----	20	Very limited Slope Frost action Depth to bedrock	1.00 0.50 0.46	Very limited Depth to bedrock Slope Cutbanks cave	1.00 1.00 0.10	Very limited Slope Depth to bedrock	1.00 0.46
HonCb:							
Hoosic, very stony--	60	Somewhat limited Slope	0.63	Very limited Cutbanks cave Slope	1.00 0.63	Somewhat limited Slope Droughty	0.63 0.10
Hazen, very stony---	30	Somewhat limited Slope Frost action	0.63 0.50	Very limited Cutbanks cave Slope	1.00 0.63	Somewhat limited Slope Droughty	0.63 0.01
HopEb:							
Hoosic, very stony--	50	Very limited Slope	1.00	Very limited Slope Cutbanks cave	1.00 1.00	Very limited Slope Droughty	1.00 0.10
Otisville, very stony-----	40	Very limited Slope	1.00	Very limited Slope Cutbanks cave	1.00 1.00	Very limited Slope Droughty	1.00 0.95



Table 18.—Roads and Streets, Shallow Excavations, and Lawns and Landscaping—Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
LacBc: Lackawanna, extremely stony----	85	Somewhat limited Frost action	0.50	Somewhat limited Fragipan Cutbanks cave	0.50 0.10	Not limited	
LacCc: Lackawanna, extremely stony----	85	Somewhat limited Slope Frost action	0.63 0.50	Somewhat limited Slope Fragipan Cutbanks cave	0.63 0.50 0.10	Somewhat limited Slope	0.63
LacDc: Lackawanna, extremely stony----	85	Very limited Slope Frost action	1.00 0.50	Very limited Slope Fragipan Cutbanks cave	1.00 0.50 0.10	Very limited Slope	1.00
LorB: Lordstown-----	50	Somewhat limited Frost action  Depth to bedrock	0.50  0.06	Very limited Depth to bedrock Cutbanks cave	1.00  1.00	Somewhat limited Depth to bedrock	0.06
Wallpack-----	35	Somewhat limited Frost action	0.50	Very limited Cutbanks cave Fragipan	1.00 0.50	Not limited	
LorC: Lordstown-----	50	Somewhat limited Slope Frost action Depth to bedrock	0.63 0.50 0.06	Very limited Depth to bedrock Cutbanks cave Slope	1.00 1.00 0.63	Somewhat limited Slope Depth to bedrock	0.63 0.06
Wallpack-----	35	Somewhat limited Slope Frost action	0.63 0.50	Very limited Cutbanks cave Slope Fragipan	1.00 0.63 0.50	Somewhat limited Slope	0.63
LorCh: Lordstown, very rocky-----	50	Somewhat limited Slope Frost action Depth to bedrock	0.63 0.50 0.06	Very limited Depth to bedrock Cutbanks cave Slope	1.00 1.00 0.63	Somewhat limited Slope Depth to bedrock	0.63 0.06
Wallpack, very rocky	35	Somewhat limited Slope Frost action	0.63 0.50	Very limited Cutbanks cave Slope Fragipan	1.00 0.63 0.50	Somewhat limited Slope	0.63
LorD: Lordstown-----	50	Very limited Slope Frost action Depth to bedrock	1.00 0.50 0.06	Very limited Depth to bedrock Slope Cutbanks cave	1.00 1.00 1.00	Very limited Slope Depth to bedrock	1.00 0.06

Table 18.—Roads and Streets, Shallow Excavations, and Lawns and Landscaping—Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
LorD: (cont.)							
Wallpack-----	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	1.00		
				Fragipan	0.50		
LorDh:							
Lordstown, very rocky-----	50	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00	Slope	1.00
		Frost action	0.50	Slope	1.00	Depth to bedrock	0.06
		Depth to bedrock	0.06	Cutbanks cave	1.00		
Wallpack, very rocky	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	1.00		
				Fragipan	0.50		
MabEh:							
Manlius, very rocky-	60	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00	Slope	1.00
		Depth to bedrock	0.71	Slope	1.00	Depth to bedrock	0.71
		Frost action	0.50	Rock fragments	0.42	Droughty	0.70
		Rock fragments	0.42	Cutbanks cave	0.10		
Nassau, very rocky--	25	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Rock fragments	0.39	Droughty	1.00
		Rock fragments	0.39				
NauBh:							
Nassau, very rocky--	50	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Frost action	0.50	Rock fragments	0.15	Droughty	1.00
		Rock fragments	0.15	Cutbanks cave	0.10	Rock fragments	0.92
Manlius, very rocky-	45	Somewhat limited		Very limited		Somewhat limited	
		Depth to bedrock	0.54	Depth to bedrock	1.00	Rock fragments	0.99
		Frost action	0.50	Rock fragments	0.33	Droughty	0.56
		Rock fragments	0.33	Cutbanks cave	0.10	Depth to bedrock	0.54
						Gravel content	0.02
NauCh:							
Nassau, very rocky--	55	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	0.63	Slope	0.63	Droughty	1.00
		Frost action	0.50	Rock fragments	0.15	Rock fragments	0.92
		Rock fragments	0.15	Cutbanks cave	0.10	Slope	0.63
Manlius, very rocky-	40	Somewhat limited		Very limited		Somewhat limited	
		Slope	0.63	Depth to bedrock	1.00	Rock fragments	0.99
		Depth to bedrock	0.54	Slope	0.63	Slope	0.63
		Frost action	0.50	Rock fragments	0.33	Droughty	0.56
		Rock fragments	0.33	Cutbanks cave	0.10	Depth to bedrock	0.54
						Gravel content	0.02

Table 18.—Roads and Streets, Shallow Excavations, and Lawns and Landscaping—Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
NauDh:							
Nassau, very rocky--	50	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Rock fragments	0.15	Droughty	1.00
		Rock fragments	0.15	Cutbanks cave	0.10	Rock fragments	0.92
Manlius, very rocky--	40	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00	Slope	1.00
		Depth to bedrock	0.54	Slope	1.00	Rock fragments	0.99
		Frost action	0.50	Rock fragments	0.33	Droughty	0.56
		Rock fragments	0.33	Cutbanks cave	0.10	Depth to bedrock	0.54
						Gravel content	0.02
NavE:							
Nassau-----	50	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Rock fragments	0.39	Droughty	1.00
		Rock fragments	0.39				
Rock outcrop-----	45	Not rated		Not rated		Not rated	
OpnCh:							
Oquaga, very rocky--	55	Somewhat limited		Very limited		Somewhat limited	
		Depth to bedrock	0.84	Depth to bedrock	1.00	Depth to bedrock	0.84
		Slope	0.63	Slope	0.63	Droughty	0.84
		Frost action	0.50	Cutbanks cave	0.10	Slope	0.63
		Rock fragments	0.01	Rock fragments	0.01		
Lackawanna, very rocky-----	30	Somewhat limited		Somewhat limited		Somewhat limited	
		Slope	0.63	Slope	0.63	Slope	0.63
		Frost action	0.50	Fragipan	0.50		
				Cutbanks cave	0.10		
OpnDh:							
Oquaga, very rocky--	50	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00	Slope	1.00
		Depth to bedrock	0.84	Slope	1.00	Depth to bedrock	0.84
		Frost action	0.50	Cutbanks cave	0.10	Droughty	0.84
		Rock fragments	0.01	Rock fragments	0.01		
Lackawanna, very rocky-----	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Fragipan	0.50		
				Cutbanks cave	0.10		
OprC:							
Oquaga-----	75	Somewhat limited		Very limited		Somewhat limited	
		Depth to bedrock	0.84	Depth to bedrock	1.00	Depth to bedrock	0.84
		Frost action	0.50	Cutbanks cave	0.10	Droughty	0.84
		Rock fragments	0.01	Rock fragments	0.01	Slope	0.01
		Slope	0.01	Slope	0.01		
Rock outcrop-----	15	Not rated		Not rated		Not rated	

Table 18.—Roads and Streets, Shallow Excavations, and Lawns and Landscaping—Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
OprE: Oquaga-----	60	Very limited Slope Depth to bedrock Frost action Rock fragments	 1.00 0.84 0.50 0.01	Very limited Depth to bedrock Slope Cutbanks cave Rock fragments	 1.00 1.00 0.10 0.01	Very limited Slope Depth to bedrock Droughty	 1.00 0.84 0.84
Rock outcrop-----	25	Not rated		Not rated		Not rated	
PHG: Pits, sand and gravel-----	95	Not rated		Not rated		Not rated	
PohA: Pompton-----	80	Very limited Frost action Saturated zone	 1.00 0.94	Very limited Saturated zone Cutbanks cave	 1.00 1.00	Somewhat limited Saturated zone	 0.94
QY: Pits, quarry-----	100	Not rated		Not rated		Not rated	
RkrB: Riverhead-----	85	Somewhat limited Frost action	 0.50	Very limited Cutbanks cave Saturated zone	 1.00 0.99	Not limited	
RnaF: Rock outcrop-----	40	Not rated		Not rated		Not rated	
Arnot-----	30	Very limited Depth to bedrock Slope Frost action	 1.00 1.00 0.50	Very limited Depth to bedrock Slope	 1.00 1.00	Very limited Depth to bedrock Slope Droughty	 1.00 1.00 0.99
Rubble land-----	20	Very limited Rock fragments Slope	 1.00 1.00	Very limited Rock fragments Slope	 1.00 1.00	Not rated	
RnfC: Rock outcrop-----	40	Not rated		Not rated		Not rated	
Farmington-----	35	Very limited Depth to bedrock Slope Frost action	 1.00 0.63 0.50	Very limited Depth to bedrock Slope	 1.00 0.63	Very limited Depth to bedrock Droughty Slope	 1.00 0.97 0.63
Galway-----	25	Somewhat limited Depth to bedrock Slope Frost action	 0.90 0.63 0.50	Very limited Depth to bedrock Cutbanks cave Slope	 1.00 1.00 0.63	Somewhat limited Depth to bedrock Slope Droughty	 0.90 0.63 0.01
RnfD: Rock outcrop-----	50	Not rated		Not rated		Not rated	
Farmington-----	40	Very limited Depth to bedrock Slope Frost action	 1.00 1.00 0.50	Very limited Depth to bedrock Slope	 1.00 1.00	Very limited Depth to bedrock Slope Droughty	 1.00 1.00 0.97

Table 18.—Roads and Streets, Shallow Excavations, and Lawns and Landscaping—Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
RnFD: (cont.)							
Galway-----	10	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00	Slope	1.00
		Depth to bedrock	0.90	Slope	1.00	Depth to bedrock	0.90
		Frost action	0.50	Cutbanks cave	1.00	Droughty	0.01
RoefBc:							
Rockaway, thin fragipan, extremely stony-----	85	Somewhat limited		Very limited		Somewhat limited	
		Frost action	0.50	Cutbanks cave	1.00	Droughty	0.07
RoefCc:							
Rockaway, thin fragipan, extremely stony-----	85	Somewhat limited		Very limited		Somewhat limited	
		Slope	0.63	Cutbanks cave	1.00	Slope	0.63
		Frost action	0.50	Slope	0.63	Droughty	0.07
RoefDc:							
Rockaway, thin fragipan, extremely stony-----	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	1.00	Droughty	0.07
RokB:							
Rockaway, thin fragipan-----	50	Somewhat limited		Very limited		Somewhat limited	
		Frost action	0.50	Cutbanks cave	1.00	Droughty	0.07
Chatfield-----	30	Somewhat limited		Very limited		Somewhat limited	
		Frost action	0.50	Depth to bedrock	1.00	Depth to bedrock	0.46
		Depth to bedrock	0.46	Cutbanks cave	0.10		
Rock outcrop-----	20	Not rated		Not rated		Not rated	
RokC:							
Rockaway, thin fragipan-----	45	Somewhat limited		Very limited		Somewhat limited	
		Slope	0.63	Cutbanks cave	1.00	Slope	0.63
		Frost action	0.50	Slope	0.63	Droughty	0.07
Chatfield-----	40	Somewhat limited		Very limited		Somewhat limited	
		Slope	0.63	Depth to bedrock	1.00	Slope	0.63
		Frost action	0.50	Slope	0.63	Depth to bedrock	0.46
		Depth to bedrock	0.46	Cutbanks cave	0.10		
Rock outcrop-----	15	Not rated		Not rated		Not rated	
RokD:							
Rockaway, thin fragipan-----	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	1.00	Droughty	0.07
Chatfield-----	25	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00	Slope	1.00
		Frost action	0.50	Slope	1.00	Depth to bedrock	0.46
		Depth to bedrock	0.46	Cutbanks cave	0.10		

Table 18.—Roads and Streets, Shallow Excavations, and Lawns and Landscaping—Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
RokD: (cont.)							
Rock outcrop-----	20	Not rated		Not rated		Not rated	
RooB:							
Rockaway, thin fragipan-----	50	Somewhat limited Frost action	0.50	Very limited Cutbanks cave	1.00	Somewhat limited Droughty	0.07
Urban land, Rockaway thin fragipan substratum-----	40	Not limited		Very limited Cutbanks cave	1.00	Not rated	
RooC:							
Rockaway, thin fragipan-----	45	Somewhat limited Slope Frost action	0.63 0.50	Very limited Cutbanks cave Slope	1.00 0.63	Somewhat limited Slope Droughty	0.63 0.07
Urban land, Rockaway thin fragipan substratum-----	40	Not limited		Very limited Cutbanks cave	1.00	Not rated	
RooD:							
Rockaway, thin fragipan-----	45	Very limited Slope Frost action	1.00 0.50	Very limited Slope Cutbanks cave	1.00 1.00	Very limited Slope Droughty	1.00 0.07
Urban land, Rockaway thin fragipan substratum-----	40	Not limited		Very limited Cutbanks cave	1.00	Not rated	
ScoA:							
Scio-----	80	Very limited Frost action Saturated zone	1.00 0.43	Very limited Saturated zone Cutbanks cave	1.00 0.10	Somewhat limited Saturated zone	0.43
SwfBc:							
Swartswood, extremely stony----	90	Somewhat limited Frost action	0.50	Very limited Cutbanks cave Fragipan	1.00 0.50	Somewhat limited Droughty	0.01
SwfCc:							
Swartswood, extremely stony----	90	Somewhat limited Slope Frost action	0.63 0.50	Very limited Cutbanks cave Slope Fragipan	1.00 0.63 0.50	Somewhat limited Slope Droughty	0.63 0.01
SwfDc:							
Swartswood, extremely stony----	85	Very limited Slope Frost action	1.00 0.50	Very limited Slope Cutbanks cave Fragipan	1.00 1.00 0.50	Very limited Slope Droughty	1.00 0.01

Table 18.—Roads and Streets, Shallow Excavations, and Lawns and Landscaping—Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
UccAs: Udifluvents, occasionally flooded-----	90	Very limited Flooding Frost action	1.00 0.50	Very limited Cutbanks cave Saturated zone Flooding	1.00 0.87 0.60	Somewhat limited Droughty Flooding	0.96 0.60
UdaB: Udorthents-----	100	Somewhat limited Frost action	0.50	Very limited Cutbanks cave	1.00	Somewhat limited Droughty	0.01
UdaB: Udorthents-----	60	Somewhat limited Frost action	0.50	Very limited Cutbanks cave	1.00	Somewhat limited Droughty	0.01
Urban land-----	40	Not rated		Not rated		Not rated	
UnfA: Unadilla-----	80	Very limited Frost action	1.00	Somewhat limited Cutbanks cave	0.10	Not limited	
UnfB: Unadilla-----	80	Very limited Frost action	1.00	Somewhat limited Cutbanks cave	0.10	Not limited	
USCHRB: Urban land, Chatfield substratum-----	40	Somewhat limited Depth to bedrock	0.46	Very limited Depth to bedrock Cutbanks cave	1.00 0.10	Not rated	
Chatfield-----	25	Somewhat limited Frost action Depth to bedrock	0.50 0.46	Very limited Depth to bedrock Cutbanks cave	1.00 0.10	Somewhat limited Depth to bedrock	0.46
Rock outcrop-----	20	Not rated		Not rated		Not rated	
USCHRC: Urban land, Chatfield substratum-----	40	Somewhat limited Depth to bedrock	0.46	Very limited Depth to bedrock Cutbanks cave	1.00 0.10	Not rated	
Chatfield-----	25	Somewhat limited Slope Frost action Depth to bedrock	0.63 0.50 0.46	Very limited Depth to bedrock Slope Cutbanks cave	1.00 0.63 0.10	Somewhat limited Slope Depth to bedrock	0.63 0.46
Rock outcrop-----	20	Not rated		Not rated		Not rated	
USCHRD: Urban land, Chatfield substratum-----	40	Somewhat limited Depth to bedrock bedrock	0.46	Very limited Depth to bedrock bedrock Cutbanks cave	1.00 0.10	Not rated	

Table 18.—Roads and Streets, Shallow Excavations, and Lawns and Landscaping—Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
USCHRD: (cont.)							
Chatfield-----	25	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00	Slope	1.00
		Frost action	0.50	Slope	1.00	Depth to bedrock	0.46
		Depth to bedrock	0.46	Cutbanks cave	0.10		
Rock outcrop-----	20	Not rated		Not rated		Not rated	
USFARC:							
Urban land,							
Farmington							
substratum-----	50	Very limited		Very limited		Not rated	
		Depth to bedrock	1.00	Depth to bedrock	1.00		
Farmington-----	30	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	0.63	Slope	0.63	Droughty	0.97
		Frost action	0.50			Slope	0.63
Rock outcrop-----	20	Not rated		Not rated		Not rated	
USFARD:							
Urban land,							
Farmington							
substratum-----	40	Very limited		Very limited		Not rated	
		Depth to bedrock	1.00	Depth to bedrock	1.00		
Farmington-----	35	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50			Droughty	0.97
Rock outcrop-----	25	Not rated		Not rated		Not rated	
USFAWB:							
Urban land,							
Farmington							
substratum-----	50	Very limited		Very limited		Not rated	
		Depth to bedrock	1.00	Depth to bedrock	1.00		
Farmington-----	30	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Frost action	0.50			Droughty	0.97
Wassaic-----	20	Very limited		Very limited		Somewhat limited	
		Low strength	1.00	Depth to bedrock	1.00	Depth to bedrock	0.65
		Depth to bedrock	0.64	Cutbanks cave	0.10		
		Frost action	0.50				
USHAZA:							
Urban land, Hazen							
substratum-----	45	Not limited		Very limited		Not rated	
				Cutbanks cave	1.00		
Hazen-----	35	Somewhat limited		Very limited		Somewhat limited	
		Frost action	0.50	Cutbanks cave	1.00	Droughty	0.01
Hoosic-----	20	Not limited		Very limited		Somewhat limited	
				Cutbanks cave	1.00	Droughty	0.10



Table 18.—Roads and Streets, Shallow Excavations, and Lawns and Landscaping—Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
USHAZB: Urban land, Hazen substratum-----	55	Not limited		Very limited Cutbanks cave	1.00	Not rated	
Hazen-----	25	Somewhat limited Frost action	0.50	Very limited Cutbanks cave	1.00	Somewhat limited Droughty	0.01
Hoosic-----	20	Not limited		Very limited Cutbanks cave	1.00	Somewhat limited Droughty	0.10
USNAME: Urban land, Nassau substratum-----	45	Very limited Depth to bedrock	1.00	Very limited Depth to bedrock	1.00	Not rated	
Nassau-----	30	Very limited Depth to bedrock Frost action Rock fragments	1.00 0.50 0.15	Very limited Depth to bedrock Rock fragments Cutbanks cave	1.00 0.15 0.10	Very limited Depth to bedrock Droughty Rock fragments	1.00 1.00 0.92
Manlius-----	25	Somewhat limited Depth to bedrock Frost action Rock fragments	0.54 0.50 0.33	Very limited Depth to bedrock Rock fragments Cutbanks cave	1.00 0.33 0.10	Somewhat limited Rock fragments Droughty Depth to bedrock Gravel content	0.99 0.56 0.54 0.02
USNAMC: Urban land, Nassau substratum-----	55	Very limited Depth to bedrock bedrock	1.00	Very limited Depth to bedrock bedrock	1.00	Not rated	
Nassau-----	25	Very limited Depth to bedrock Slope Frost action Rock fragments	1.00 0.63 0.50 0.15	Very limited Depth to bedrock Slope Rock fragments Cutbanks cave	1.00 0.63 0.15 0.10	Very limited Depth to bedrock Droughty Rock fragments Slope	1.00 1.00 0.92 0.63
Manlius-----	20	Somewhat limited Slope Depth to bedrock Frost action Rock fragments	0.63 0.54 0.50 0.33	Very limited Depth to bedrock Slope Rock fragments Cutbanks cave	1.00 0.63 0.33 0.10	Somewhat limited Rock fragments Slope Droughty Depth to bedrock Gravel content	0.99 0.63 0.56 0.54 0.02
USNAMD: Urban land, Nassau substratum-----	60	Very limited Depth to bedrock	1.00	Very limited Depth to bedrock	1.00	Not rated	
Nassau-----	25	Very limited Depth to bedrock Slope Frost action Rock fragments	1.00 1.00 0.50 0.15	Very limited Depth to bedrock Slope Rock fragments Cutbanks cave	1.00 1.00 0.15 0.10	Very limited Depth to bedrock Slope Droughty Rock fragments	1.00 1.00 1.00 0.92

Table 18.—Roads and Streets, Shallow Excavations, and Lawns and Landscaping—Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
USNAMD: (cont.)							
Manlius-----	15	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00	Slope	1.00
		Depth to bedrock	0.54	Slope	1.00	Rock fragments	0.99
		Frost action	0.50	Rock fragments	0.33	Droughty	0.56
		Rock fragments	0.33	Cutbanks cave	0.10	Depth to bedrock	0.54
						Gravel content	0.02
USWUSB:							
Urban land,							
Wurtsboro							
substratum-----	45	Somewhat limited		Very limited		Not rated	
		Saturated zone	0.75	Saturated zone	1.00		
				Cutbanks cave	1.00		
				Fragipan	0.50		
Wurtsboro-----	35	Somewhat limited		Very limited		Somewhat limited	
		Saturated zone	0.75	Saturated zone	1.00	Saturated zone	0.75
		Frost action	0.50	Cutbanks cave	1.00		
				Fragipan	0.50		
Swartswood-----	20	Somewhat limited		Very limited		Somewhat limited	
		Frost action	0.50	Cutbanks cave	1.00	Droughty	0.01
				Fragipan	0.50		
VepBc:							
Venango, extremely							
stony-----	90	Very limited		Very limited		Very limited	
		Saturated zone	1.00	Saturated zone	1.00	Saturated zone	1.00
		Frost action	1.00	Cutbanks cave	1.00		
		Low strength	1.00	Fragipan	0.50		
VepCc:							
Venango, extremely							
stony-----	85	Very limited		Very limited		Very limited	
		Saturated zone	1.00	Saturated zone	1.00	Saturated zone	1.00
		Frost action	1.00	Cutbanks cave	1.00	Slope	0.63
		Low strength	1.00	Slope	0.63		
		Slope	0.63	Fragipan	0.50		
WaahAt:							
Wallkill, frequently							
flooded-----	90	Very limited		Very limited		Very limited	
		Ponding	1.00	Ponding	1.00	Ponding	1.00
		Saturated zone	1.00	Saturated zone	1.00	Flooding	1.00
		Frost action	1.00	Organic matter	1.00	Saturated zone	1.00
				content			
		Flooding	1.00	Flooding	0.80		
WabBb:							
Wallpack, aeolian							
mantle, very stony-	85	Somewhat limited		Very limited		Not limited	
		Frost action	0.50	Cutbanks cave	1.00		
WabCb:							
Wallpack, aeolian							
mantle, very stony-	85	Somewhat limited		Very limited		Somewhat limited	
		Slope	0.63	Cutbanks cave	1.00	Slope	0.63
		Frost action	0.50	Slope	0.63		

Table 18.—Roads and Streets, Shallow Excavations, and Lawns and Landscaping—Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
WabDb: Wallpack, aeolian mantle, very stony-	85	Very limited Slope Frost action	1.00 0.50	Very limited Slope Cutbanks cave	1.00 1.00	Very limited Slope	1.00
WacB: Wallpack-----	85	Somewhat limited Frost action	0.50	Very limited Cutbanks cave Fragipan	1.00 0.50	Not limited	
WacBc: Wallpack, extremely stony-----	85	Somewhat limited Frost action	0.50	Very limited Cutbanks cave Fragipan	1.00 0.50	Not limited	
WacC: Wallpack-----	85	Somewhat limited Slope Frost action	0.63 0.50	Very limited Cutbanks cave Slope Fragipan	1.00 0.63 0.50	Somewhat limited Slope	0.63
WacCc: Wallpack, extremely stony-----	85	Somewhat limited Slope Frost action	0.63 0.50	Very limited Cutbanks cave Slope Fragipan	1.00 0.63 0.50	Somewhat limited Slope	0.63
WacD: Wallpack-----	85	Very limited Slope Frost action	1.00 0.50	Very limited Slope Cutbanks cave Fragipan	1.00 1.00 0.50	Very limited Slope	1.00
WacDc: Wallpack, extremely stony-----	85	Very limited Slope Frost action	1.00 0.50	Very limited Slope Cutbanks cave Fragipan	1.00 1.00 0.50	Very limited Slope	1.00
WATER: Water-----	100	Not rated		Not rated		Not rated	
WecBc: Wellsboro, extremely stony-----	85	Very limited Frost action Saturated zone	1.00 0.19	Very limited Saturated zone Fragipan Cutbanks cave	1.00 0.50 0.10	Somewhat limited Saturated zone Rock fragments	0.19 0.16
WecCc: Wellsboro, extremely stony-----	85	Very limited Frost action Slope Saturated zone	1.00 0.63 0.19	Very limited Saturated zone Slope Fragipan Cutbanks cave	1.00 0.63 0.50 0.10	Somewhat limited Slope Saturated zone Rock fragments	0.63 0.19 0.16

Table 18.—Roads and Streets, Shallow Excavations, and Lawns and Landscaping—Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
WumBc: Wurtsboro, extremely stony-----	85	Somewhat limited Saturated zone Frost action	0.75 0.50	Very limited Saturated zone Cutbanks cave Fragipan	1.00 1.00 0.50	Somewhat limited Saturated zone	0.75
WusBc: Wurtsboro, extremely stony-----	60	Somewhat limited Saturated zone Frost action	0.75 0.50	Very limited Saturated zone Cutbanks cave Fragipan	1.00 1.00 0.50	Somewhat limited Saturated zone	0.75
Swartswood, extremely stony----	40	Somewhat limited Frost action	0.50	Very limited Cutbanks cave Fragipan	1.00 0.50	Somewhat limited Droughty	0.01
WusCc: Wurtsboro, extremely stony-----	60	Somewhat limited Saturated zone Slope Frost action	0.75 0.63 0.50	Very limited Saturated zone Cutbanks cave Slope Fragipan	1.00 1.00 0.63 0.50	Somewhat limited Saturated zone Slope	0.75 0.63
Swartswood, extremely stony----	40	Somewhat limited Slope Frost action	0.63 0.50	Very limited Cutbanks cave Slope Fragipan	1.00 0.63 0.50	Somewhat limited Slope Droughty	0.63 0.01
WusDc: Wurtsboro, extremely stony-----	80	Very limited Slope Saturated zone Frost action	1.00 0.75 0.50	Very limited Slope Saturated zone Cutbanks cave Fragipan	1.00 1.00 1.00 0.50	Very limited Slope Saturated zone	1.00 0.75
Swartswood, extremely stony----	20	Very limited Slope Frost action	1.00 0.50	Very limited Slope Cutbanks cave Fragipan	1.00 1.00 0.50	Very limited Slope Droughty	1.00 0.01

Table 19.—Disposal Fields

(The information in this table indicates the dominant soil condition but does not eliminate the need or onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. The recommended system type listed under type of installation permitted in NJ are derived from NJAC 7:9A standards (see footnotes at end of table). The permitted system type is generally the most desirable for the given soil and site conditions. See text for further explanation of ratings in this table.

Map symbol and soil name	Pct. of map unit	Disposal Field NJAC 7:9A		Type Installation Permitted in NJ		NJ Suitability Class (for each limitation most restrictive class is listed)	
		Rating class and limiting features	Value	Limiting features and permitted system type	Value	Suitability class and limiting feature	Value
AhbBc: Alden, extremely stony-----	90	Very limited Depth to apparent zone of saturation Not Permitted - Hydric Soil	1.00 1.00 1.00	Depth to apparent zone of saturation Not Permitted - Hydric Soil	1.00 1.00 1.00	IIIW <sub>r</sub>  Not Permitted - Hydric Soil	1.00  1.00
AhcBc: Alden, gneiss till substratum, extremely stony----	90	Very limited Depth to apparent zone of saturation Not Permitted - Hydric Soil	1.00 1.00 1.00	Depth to apparent zone of saturation Not Permitted - Hydric Soil	1.00 1.00 1.00	IIIW <sub>r</sub>  Not Permitted - Hydric Soil	1.00  1.00
AruCh: Arnot, very rocky---	55	Very limited Restrictive substratum Depth to massive bedrock	1.00 1.00 1.00	Restrictive substratum Depth to massive bedrock	1.00 1.00 1.00	IIIS <sub>r</sub>  IIIS <sub>r</sub>	1.00  1.00
Lordstown, very rocky-----	40	Very limited Restrictive substratum Depth to massive bedrock	1.00 1.00 1.00	Restrictive substratum Depth to massive bedrock	1.00 1.00 1.00	IIIS <sub>r</sub>  IIIS <sub>r</sub>	1.00  1.00
ArvD: Arnot-----	45	Very limited Restrictive substratum Depth to massive bedrock	1.00 1.00 1.00	Restrictive substratum Depth to massive bedrock	1.00 1.00 1.00	IIIS <sub>r</sub>  IIIS <sub>r</sub>	1.00  1.00
Lordstown-----	40	Very limited Restrictive substratum Depth to massive bedrock	1.00 1.00 1.00	Restrictive substratum Depth to massive bedrock	1.00 1.00 1.00	IIIS <sub>r</sub>  IIIS <sub>r</sub>	1.00  1.00
Rock outcrop-----	15	Very limited Restrictive substratum Depth to massive bedrock Not rated	1.00 1.00 1.00 1.00	Restrictive substratum Depth to massive bedrock Not rated	1.00 1.00 1.00 1.00	IIIS <sub>r</sub>  Not rated IIIS <sub>r</sub>	1.00  1.00 1.00

Table 19.—Disposal Fields—Continued

Map symbol and soil name	Pct. of map unit	Disposal Field NJAC 7:9A		Type Installation Permitted in NJ		NJ Suitability Class (for each limitation most restrictive class is listed)	
		Rating class and limiting features	Value	Limiting features and permitted system type	Value	Suitability class and limiting feature	Value
ArvE:							
Arnot-----	60	Very limited					
		Restrictive	1.00	Restrictive	1.00	Not Permitted -	1.00
		substratum		substratum		Too Steep	
		Depth to massive	1.00	Depth to massive	1.00	IIISr	1.00
		bedrock		bedrock			
		Not Permitted Too	1.00	Not Permitted -	1.00	IIISr	1.00
		Steep		Too Steep			
Lordstown-----	25	Very limited					
		Restrictive	1.00	Restrictive	1.00	Not Permitted -	1.00
		substratum		substratum		Too Steep	
		Depth to massive	1.00	Depth to massive	1.00	IIISr	1.00
		bedrock		bedrock			
		Not Permitted Too	1.00	Not Permitted -	1.00	IIISr	1.00
		Steep		Too Steep			
Rock outcrop-----	15	Very limited					
		Restrictive	1.00	Restrictive	1.00	IIISr	1.00
		substratum		substratum			
		Depth to massive	1.00	Depth to massive	1.00	Not rated	1.00
		bedrock		bedrock			
		Not rated	1.00	Not rated	1.00	IIISr	1.00
AtcA:							
Atherton, very							
poorly drained-----	60	Very limited					
		Depth to apparent	1.00	Depth to apparent	1.00	IIIWr	1.00
		zone of		zone of			
		saturation		saturation			
		Not Permitted -	1.00	Not Permitted -	1.00	Not Permitted -	1.00
		Hydric Soil		Hydric Soil		Hydric Soil	
Atherton, poorly							
drained-----	30	Very limited					
		Depth to apparent	1.00	Depth to apparent	1.00	IIIWr	1.00
		zone of		zone of			
		saturation		saturation			
		Not Permitted -	1.00	Not Permitted -	1.00	Not Permitted -	1.00
		Hydric Soil		Hydric Soil		Hydric Soil	
CatbA:							
Catden-----	85	Very limited					
		Depth to apparent	1.00	Depth to apparent	1.00	IIIWr	1.00
		zone of		zone of			
		saturation		saturation			
		Not Permitted -	1.00	Not Permitted -	1.00	Not Permitted -	1.00
		Hydric Soil		Hydric Soil		Hydric Soil	
ChkC:							
Chatfield-----	45	Very limited					
		Restrictive	1.00	Restrictive	1.00	IIISr	1.00
		substratum		substratum			
		Depth to massive	1.00	Depth to massive	1.00	IIISr	1.00
		bedrock		bedrock			
Hollis-----	30	Very limited					
		Restrictive	1.00	Restrictive	1.00	IIISr	1.00
		substratum		substratum			
		Depth to massive	1.00	Depth to massive	1.00	IIISr	1.00
		bedrock		bedrock			

Table 19.—Disposal Fields—Continued

Map symbol and soil name	Pct. of map unit	Disposal Field NJAC 7:9A		Type Installation Permitted in NJ		NJ Suitability Class (for each limitation most restrictive class is listed)	
		Rating class and limiting features	Value	Limiting features and permitted system type	Value	Suitability class and limiting feature	Value
ChkC: (cont.) Rock outcrop-----	25	Very limited Restrictive substratum Depth to massive bedrock Not rated	1.00 1.00 1.00	Restrictive substratum Depth to massive bedrock Not rated	1.00 1.00 1.00	IIISr Not rated IIISr	1.00 1.00 1.00
ChkE: Chatfield-----	45	Very limited Restrictive substratum Depth to massive bedrock Not Permitted Too Steep	1.00 1.00 1.00	Restrictive substratum Depth to massive bedrock Not Permitted - Too Steep	1.00 1.00 1.00	Not Permitted - Too Steep IIISr IIISr	1.00 1.00 1.00
Hollis-----	30	Very limited Restrictive substratum Depth to massive bedrock Not Permitted Too Steep	1.00 1.00 1.00	Restrictive substratum Depth to massive bedrock Not Permitted - Too Steep	1.00 1.00 1.00	Not Permitted - Too Steep IIISr IIISr	1.00 1.00 1.00
Rock outcrop-----	20	Very limited Restrictive substratum Depth to massive bedrock Not rated	1.00 1.00 1.00	Restrictive substratum Depth to massive bedrock Not rated	1.00 1.00 1.00	IIISr Not rated IIISr	1.00 1.00 1.00
ChwBc: Chippewa, extremely stony-----	80	Very limited Depth to perched zone of saturation Restrictive substratum Restrictive horizon	1.00 1.00 1.00	C drain  Restrictive substratum SRB, SRE	1.00 1.00 1.00	IIIWp IIHr IIISr	1.00 1.00 1.00
CorA: Colonie-----	80	Not limited		C		I	
CorB: Colonie-----	80	Not limited		C		I	
DefAr: Delaware, rarely flooded-----	80	Very limited Not Permitted - Flooding	1.00	Not Permitted - Flooding	1.00	Not Permitted - Flooding	1.00
DefBr: Delaware, rarely flooded-----	80	Very limited Not Permitted - Flooding	1.00	Not Permitted - Flooding	1.00	Not Permitted - Flooding	1.00

Table 19.—Disposal Fields—Continued

Map symbol and soil name	Pct. of map unit	Disposal Field NJAC 7:9A		Type Installation Permitted in NJ		NJ Suitability Class (for each limitation most restrictive class is listed)	
		Rating class and limiting features	Value	Limiting features and permitted system type	Value	Suitability class and limiting feature	Value
<b>FaxC:</b>							
Farmington-----	50	Very limited Depth to massive bedrock	1.00	Depth to massive bedrock	1.00	IIISr	1.00
Rock outcrop-----	40	Very limited Depth to massive bedrock	1.00	Depth to massive bedrock	1.00	IIISr	1.00
		Not rated	1.00	Not rated	1.00	Not rated	1.00
<b>FdwB:</b>							
Farmington-----	40	Very limited Depth to massive bedrock	1.00	Depth to massive bedrock	1.00	IIISr	1.00
Wassaic-----	30	Very limited Depth to massive bedrock	1.00	Depth to massive bedrock	1.00	IIISr	1.00
Rock outcrop-----	25	Very limited Depth to massive bedrock	1.00	Depth to massive bedrock	1.00	IIISr	1.00
		Not rated	1.00	Not rated	1.00	Not rated	1.00
<b>FmhAs:</b>							
Fluvaquents, occasionally flooded-----	90	Very limited Depth to apparent zone of saturation	1.00	Depth to apparent zone of saturation	1.00	Not Permitted - Flooding	1.00
		Not Permitted - Flooding	1.00	Not Permitted - Flooding	1.00	IIIWr	1.00
		Not Permitted - Hydric Soil	1.00	Not Permitted - Hydric Soil	1.00	Not Permitted - Hydric Soil	1.00
<b>FrdAb:</b>							
Fredon, very stony--	45	Very limited Depth to apparent zone of saturation	1.00	Depth to apparent zone of saturation	1.00	IIIWr	1.00
		Excessively coarse horizon	0.99	SRE, M	0.99	IIHc	0.99
Halsey, very stony--	40	Very limited Depth to apparent zone of saturation	1.00	Depth to apparent zone of saturation	1.00	IIIWr	1.00
		Not Permitted - Hydric Soil	1.00	Not Permitted - Hydric Soil	1.00	Not Permitted - Hydric Soil	1.00
<b>GawEh:</b>							
Galway, very rocky--	80	Very limited Depth to massive bedrock	1.00	Depth to massive bedrock	1.00	Not Permitted - Too Steep	1.00
		Not Permitted Too Steep	1.00	Not Permitted - Too Steep	1.00	IIISr	1.00



Table 19.—Disposal Fields—Continued

Map symbol and soil name	Pct. of map unit	Disposal Field NJAC 7:9A		Type Installation Permitted in NJ		NJ Suitability Class (for each limitation most restrictive class is listed)	
		Rating class and limiting features	Value	Limiting features and permitted system type	Value	Suitability class and limiting feature	Value
<b>HdxAb:</b>							
Hazen, very stony---	50	Not limited		C		I	
Hoosic, very stony--	40	Somewhat limited					
		Excessively coarse horizon	0.99	SRE, M	0.99	IIHc	0.99
		Excessively coarse substratum	0.99	SRE, M	0.99	IISc	0.99
<b>HdxBb:</b>							
Hazen, very stony---	60	Not limited		C		I	
Hoosic, very stony--	35	Somewhat limited					
		Excessively coarse horizon	0.99	SRE, M	0.99	IIHc	0.99
		Excessively coarse substratum	0.99	SRE, M	0.99	IISc	0.99
<b>HhmBc:</b>							
Hibernia, extremely stony-----	80	Very limited					
		Depth to perched zone of saturation	1.00	C drain	1.00	IIIWp	1.00
		Restrictive substratum	1.00	Restrictive substratum	1.00	IIHr	1.00
		Restrictive horizon	1.00	SRB, SRE	1.00	IIISr	1.00
<b>HkrgBb:</b>							
Hinckley, very stony	85	Somewhat limited					
		Excessively coarse horizon	0.99	SRE, M	0.99	IIHc	0.99
		Excessively coarse substratum	0.99	SRE, M	0.99	IISc	0.99
<b>HkrgCb:</b>							
Hinckley, very stony	85	Somewhat limited					
		Excessively coarse horizon	0.99	SRE, M	0.99	IIHc	0.99
		Excessively coarse substratum	0.99	SRE, M	0.99	IISc	0.99
<b>HncD:</b>							
Hollis-----	45	Very limited					
		Restrictive substratum	1.00	Restrictive substratum	1.00	IIISr	1.00
		Depth to massive bedrock	1.00	Depth to massive bedrock	1.00	IIISr	1.00
Rock outcrop-----	30	Very limited					
		Restrictive substratum	1.00	Restrictive substratum	1.00	IIISr	1.00
		Depth to massive bedrock	1.00	Depth to massive bedrock	1.00	Not rated	1.00
		Not rated	1.00	Not rated	1.00	IIISr	1.00

Table 19.—Disposal Fields—Continued

Map symbol and soil name	Pct. of map unit	Disposal Field NJAC 7:9A		Type Installation Permitted in NJ		NJ Suitability Class (for each limitation most restrictive class is listed)	
		Rating class and limiting features	Value	Limiting features and permitted system type	Value	Suitability class and limiting feature	Value
HnC D: Chatfield-----	20	Very limited Restrictive substratum Depth to massive bedrock	1.00 1.00	Restrictive substratum Depth to massive bedrock	1.00 1.00	IIISr IIISr	1.00 1.00
HonCb: Hoosic, very stony--	60	Somewhat limited Excessively coarse horizon Excessively coarse substratum	0.99 0.99	SRE, M SRE, M	0.99 0.99	IIHc IIISc	0.99 0.99
Hazen, very stony---	30	Not limited		C		I	
HopEb: Hoosic, very stony--	50	Very limited Not Permitted Too Steep Excessively coarse horizon Excessively coarse substratum	1.00 0.99 0.99	Not Permitted - Too Steep SRE, M SRE, M	1.00 0.99 0.99	Not Permitted - Too Steep IIHc IIISc	1.00 0.99 0.99
Otisville, very stony-----	40	Very limited Not Permitted Too Steep Excessively coarse horizon Excessively coarse substratum	1.00 0.99 0.99	Not Permitted - Too Steep SRE, M SRE, M	1.00 0.99 0.99	Not Permitted - Too Steep IIHc IIISc	1.00 0.99 0.99
LacBc: Lackawanna, extremely stony----	85	Very limited Restrictive substratum Restrictive horizon	1.00 1.00	Restrictive substratum SRB, SRE	1.00 1.00	IIIHr IIISr	1.00 1.00
LacCc: Lackawanna, extremely stony----	85	Very limited Restrictive substratum Restrictive horizon	1.00 1.00	Restrictive substratum SRB, SRE	1.00 1.00	IIIHr IIISr	1.00 1.00
LacDc: Lackawanna, extremely stony----	85	Very limited Restrictive substratum Restrictive horizon	1.00 1.00	Restrictive substratum SRB, SRE	1.00 1.00	IIIHr IIISr	1.00 1.00

Table 19.—Disposal Fields—Continued

Map symbol and soil name	Pct. of map unit	Disposal Field NJAC 7:9A		Type Installation Permitted in NJ		NJ Suitability Class (for each limitation most restrictive class is listed)	
		Rating class and limiting features	Value	Limiting features and permitted system type	Value	Suitability class and limiting feature	Value
LorB:							
Lordstown-----	50	Very limited Restrictive substratum	1.00	Restrictive substratum	1.00	IIISr	1.00
		Depth to massive bedrock	1.00	Depth to massive bedrock	1.00	IIISr	1.00
Wallpack-----	35	Very limited Restrictive substratum	1.00	Restrictive substratum	1.00	IIHr	1.00
		Restrictive horizon	1.00	SRB, SRE	1.00	IIISr	1.00
LorC:							
Lordstown-----	50	Very limited Restrictive substratum	1.00	Restrictive substratum	1.00	IIISr	1.00
		Depth to massive bedrock	1.00	Depth to massive bedrock	1.00	IIISr	1.00
Wallpack-----	35	Very limited Restrictive substratum	1.00	Restrictive substratum	1.00	IIHr	1.00
		Restrictive horizon	1.00	SRB, SRE	1.00	IIISr	1.00
LorCh:							
Lordstown, very rocky-----	50	Very limited Restrictive substratum	1.00	Restrictive substratum	1.00	IIISr	1.00
		Depth to massive bedrock	1.00	Depth to massive bedrock	1.00	IIISr	1.00
Wallpack, very rocky	35	Very limited Restrictive substratum	1.00	Restrictive substratum	1.00	IIHr	1.00
		Restrictive horizon	1.00	SRB, SRE	1.00	IIISr	1.00
LorD:							
Lordstown-----	50	Very limited Restrictive substratum	1.00	Restrictive substratum	1.00	IIISr	1.00
		Depth to massive bedrock	1.00	Depth to massive bedrock	1.00	IIISr	1.00
Wallpack-----	35	Very limited Restrictive substratum	1.00	Restrictive substratum	1.00	IIHr	1.00
		Restrictive horizon	1.00	SRB, SRE	1.00	IIISr	1.00
LorDh:							
Lordstown, very rocky-----	50	Very limited Restrictive substratum	1.00	Restrictive substratum	1.00	IIISr	1.00
		Depth to massive bedrock	1.00	Depth to massive bedrock	1.00	IIISr	1.00

Table 19.—Disposal Fields—Continued

Map symbol and soil name	Pct. of map unit	Disposal Field NJAC 7:9A		Type Installation Permitted in NJ		NJ Suitability Class (for each limitation most restrictive class is listed)	
		Rating class and limiting features	Value	Limiting features and permitted system type	Value	Suitability class and limiting feature	Value
LorDh: Wallpack, very rocky	40	Very limited					
		Restrictive substratum	1.00	Restrictive substratum	1.00	IIHr	1.00
		Restrictive horizon	1.00	SRB, SRE	1.00	IIISr	1.00
MabEh: Manlius, very rocky	60	Very limited					
		Restrictive substratum	1.00	Restrictive substratum	1.00	Not Permitted - Too Steep	1.00
		Depth to massive bedrock	1.00	Depth to massive bedrock	1.00	IIISr	1.00
		Not Permitted Too Steep	1.00	Not Permitted - Too Steep	1.00	IIISr	1.00
Nassau, very rocky	25	Very limited					
		Restrictive substratum	1.00	Restrictive substratum	1.00	Not Permitted - Too Steep	1.00
		Depth to massive bedrock	1.00	Depth to massive bedrock	1.00	IIISr	1.00
		Not Permitted Too Steep	1.00	Not Permitted - Too Steep	1.00	IIISr	1.00
NauBh: Nassau, very rocky	50	Very limited					
		Restrictive substratum	1.00	Restrictive substratum	1.00	IIISr	1.00
		Depth to massive bedrock	1.00	Depth to massive bedrock	1.00	IIISr	1.00
		Excessively coarse horizon	0.99	SRE, M	0.99	IIHc	0.99
Manlius, very rocky	45	Very limited					
		Restrictive substratum	1.00	Restrictive substratum	1.00	IIISr	1.00
		Depth to massive bedrock	1.00	Depth to massive bedrock	1.00	IIISr	1.00
		Excessively coarse horizon	0.99	SRE, M	0.99	IIHc	0.99
NauCh: Nassau, very rocky	55	Very limited					
		Restrictive substratum	1.00	Restrictive substratum	1.00	IIISr	1.00
		Depth to massive bedrock	1.00	Depth to massive bedrock	1.00	IIISr	1.00
		Excessively coarse horizon	0.99	SRE, M	0.99	IIHc	0.99
Manlius, very rocky	40	Very limited					
		Restrictive substratum	1.00	Restrictive substratum	1.00	IIISr	1.00
		Depth to massive bedrock	1.00	Depth to massive bedrock	1.00	IIISr	1.00
		Excessively coarse horizon	0.99	SRE, M	0.99	IIHc	0.99

Table 19.—Disposal Fields—Continued

Map symbol and soil name	Pct. of map unit	Disposal Field NJAC 7:9A		Type Installation Permitted in NJ		NJ Suitability Class (for each limitation most restrictive class is listed)	
		Rating class and limiting features	Value	Limiting features and permitted system type	Value	Suitability class and limiting feature	Value
NauDh: Nassau, very rocky--	50	Very limited Restrictive substratum Depth to massive bedrock Excessively coarse horizon	1.00 1.00 0.99	Restrictive substratum Depth to massive bedrock SRE, M	1.00 1.00 0.99	IIISr IIISr IIHc	1.00 1.00 0.99
Manlius, very rocky-	40	Very limited Restrictive substratum Depth to massive bedrock Excessively coarse horizon	1.00 1.00 0.99	Restrictive substratum Depth to massive bedrock SRE, M	1.00 1.00 0.99	IIISr IIISr IIHc	1.00 1.00 0.99
NavE: Nassau-----	50	Very limited Restrictive substratum Depth to massive bedrock Not Permitted Too Steep	1.00 1.00 1.00	Restrictive substratum Depth to massive bedrock Not Permitted - Too Steep	1.00 1.00 1.00	Not Permitted - Too Steep IIISr IIISr	1.00 1.00 1.00
Rock outcrop-----	45	Very limited Restrictive substratum Depth to massive bedrock Not rated	1.00 1.00 1.00	Restrictive substratum Depth to massive bedrock Not rated	1.00 1.00 1.00	IIISr Not rated IIISr	1.00 1.00 1.00
OpnCh: Oquaga, very rocky--	55	Very limited Restrictive substratum Depth to massive bedrock Excessively coarse horizon	1.00 1.00 0.99	Restrictive substratum Depth to massive bedrock SRE, M	1.00 1.00 0.99	IIISr IIISr IIHc	1.00 1.00 0.99
Lackawanna, very rocky-----	30	Very limited Restrictive substratum Restrictive horizon	1.00 1.00	Restrictive substratum SRB, SRE	1.00 1.00	IIHr IIISr	1.00 1.00
OpnDh: Oquaga, very rocky--	50	Very limited Restrictive substratum Depth to massive bedrock Excessively coarse horizon	1.00 1.00 0.99	Restrictive substratum Depth to massive bedrock SRE, M	1.00 1.00 0.99	IIISr IIISr IIHc	1.00 1.00 0.99

Table 19.—Disposal Fields—Continued

Map symbol and soil name	Pct. of map unit	Disposal Field NJAC 7:9A		Type Installation Permitted in NJ		NJ Suitability Class (for each limitation most restrictive class is listed)	
		Rating class and limiting features	Value	Limiting features and permitted system type	Value	Suitability class and limiting feature	Value
OpnDh: (cont.) Lackawanna, very rocky-----	35	Very limited Restrictive substratum Restrictive horizon	1.00 1.00 1.00	Restrictive substratum SRB, SRE	1.00 1.00 1.00	IIIHr IIISr	1.00 1.00
OprC: Oquaga-----	75	Very limited Restrictive substratum Depth to massive bedrock Excessively coarse horizon	1.00 1.00 1.00 0.99	Restrictive substratum Depth to massive bedrock SRE, M	1.00 1.00 1.00 0.99	IIISr IIISr IIHc	1.00 1.00 0.99
Rock outcrop-----	15	Very limited Restrictive substratum Depth to massive bedrock Not rated	1.00 1.00 1.00 1.00	Restrictive substratum Depth to massive bedrock Not rated	1.00 1.00 1.00 1.00	IIISr Not rated IIISr	1.00 1.00 1.00
OprE: Oquaga-----	60	Very limited Restrictive substratum Depth to massive bedrock Not Permitted Too Steep	1.00 1.00 1.00 1.00	Restrictive substratum Depth to massive bedrock Not Permitted - Too Steep	1.00 1.00 1.00 1.00	Not Permitted - Too Steep IIISr IIISr	1.00 1.00 1.00 1.00
Rock outcrop-----	25	Very limited Restrictive substratum Depth to massive bedrock Not rated	1.00 1.00 1.00 1.00	Restrictive substratum Depth to massive bedrock Not rated	1.00 1.00 1.00 1.00	IIISr Not rated IIISr	1.00 1.00 1.00
PHG: Pits, sand and gravel-----	95	Not Rated		Not Rated		Not Rated	
PohA: Pompton-----	80	Very limited Depth to apparent zone of saturation	1.00	Depth to apparent zone of saturation	1.00	IIIWrr	1.00
QY: Pits, quarry-----	100	Not Rated		Not Rated		Not Rated	

Table 19.—Disposal Fields—Continued

Map symbol and soil name	Pct. of map unit	Disposal Field NJAC 7:9A		Type Installation Permitted in NJ		NJ Suitability Class (for each limitation most restrictive class is listed)	
		Rating class and limiting features	Value	Limiting features and permitted system type	Value	Suitability class and limiting feature	Value
RkrB: Riverhead-----	85	Somewhat limited					
		Excessively coarse horizon	0.99	SRE, M	0.99	IIHc	0.99
		Excessively coarse substratum	0.99	SRE, M	0.99	IISc	0.99
		Depth to apparent zone of saturation	0.74	M	0.74	IIWr	0.74
RnaF: Rock outcrop-----	40	Very limited					
		Restrictive substratum	1.00	Restrictive substratum	1.00	IIISr	1.00
		Depth to massive bedrock	1.00	Depth to massive bedrock	1.00	Not rated	1.00
		Not rated	1.00	Not rated	1.00	IIISr	1.00
Arnot-----	30	Very limited					
		Restrictive substratum	1.00	Restrictive substratum	1.00	Not Permitted - Too Steep	1.00
		Depth to massive bedrock	1.00	Depth to massive bedrock	1.00	IIISr	1.00
		Not Permitted Too Steep	1.00	Not Permitted - Too Steep	1.00	IIISr	1.00
Rubble land-----	20	Very limited					
		Not Permitted Too Steep	1.00	Not Permitted - Too Steep	1.00	Not Permitted - Too Steep	1.00
		Not rated	1.00	Not rated	1.00	Not rated	1.00
		Excessively coarse horizon	0.99	SRE, M	0.99	IIHc	0.99
RnfC: Rock outcrop-----	40	Very limited					
		Depth to massive bedrock	1.00	Depth to massive bedrock	1.00	IIISr	1.00
		Not rated	1.00	Not rated	1.00	Not rated	1.00
Farmington-----	35	Very limited					
		Depth to massive bedrock	1.00	Depth to massive bedrock	1.00	IIISr	1.00
Galway-----	25	Very limited					
		Depth to massive bedrock	1.00	Depth to massive bedrock	1.00	IIISr	1.00
RnfD: Rock outcrop-----	50	Very limited					
		Depth to massive bedrock	1.00	Depth to massive bedrock	1.00	IIISr	1.00
		Not rated	1.00	Not rated	1.00	Not rated	1.00
Farmington-----	40	Very limited					
		Depth to massive bedrock	1.00	Depth to massive bedrock	1.00	IIISr	1.00

Table 19.—Disposal Fields—Continued

Map symbol and soil name	Pct. of map unit	Disposal Field NJAC 7:9A		Type Installation Permitted in NJ		NJ Suitability Class (for each limitation most restrictive class is listed)	
		Rating class and limiting features	Value	Limiting features and permitted system type	Value	Suitability class and limiting feature	Value
RnfD: (cont.) Galway-----	10	Very limited Depth to massive bedrock	1.00	Depth to massive bedrock	1.00	IIISr	1.00
RoefBc: Rockaway, thin fragipan, extremely stony-----	85	Very limited Restrictive substratum	1.00	Restrictive substratum	1.00	IIIHr	1.00
		Restrictive horizon	1.00	SRB, SRE	1.00	IIISr	1.00
RoefCc: Rockaway, thin fragipan, extremely stony-----	85	Very limited Restrictive substratum	1.00	Restrictive substratum	1.00	IIIHr	1.00
		Restrictive horizon	1.00	SRB, SRE	1.00	IIISr	1.00
RoefDc: Rockaway, thin fragipan, extremely stony-----	85	Very limited Restrictive substratum	1.00	Restrictive substratum	1.00	IIIHr	1.00
		Restrictive horizon	1.00	SRB, SRE	1.00	IIISr	1.00
RokB: Rockaway, thin fragipan-----	50	Very limited Restrictive substratum	1.00	Restrictive substratum	1.00	IIIHr	1.00
		Restrictive horizon	1.00	SRB, SRE	1.00	IIISr	1.00
Chatfield-----	30	Very limited Restrictive substratum	1.00	Restrictive substratum	1.00	IIISr	1.00
		Depth to massive bedrock	1.00	Depth to massive bedrock	1.00	IIISr	1.00
Rock outcrop-----	20	Very limited Restrictive substratum	1.00	Restrictive substratum	1.00	IIISr	1.00
		Depth to massive bedrock	1.00	Depth to massive bedrock	1.00	Not rated	1.00
		Not rated	1.00	Not rated	1.00	IIISr	1.00
RokC: Rockaway, thin fragipan-----	45	Very limited Restrictive substratum	1.00	Restrictive substratum	1.00	IIIHr	1.00
		Restrictive horizon	1.00	SRB, SRE	1.00	IIISr	1.00



Table 19.—Disposal Fields—Continued

Map symbol and soil name	Pct. of map unit	Disposal Field NJAC 7:9A		Type Installation Permitted in NJ		NJ Suitability Class (for each limitation most restrictive class is listed)	
		Rating class and limiting features	Value	Limiting features and permitted system type	Value	Suitability class and limiting feature	Value
RokC: (cont.) Chatfield-----	40	Very limited Restrictive substratum Depth to massive bedrock	1.00 1.00	Restrictive substratum Depth to massive bedrock	1.00 1.00	IIISr IIISr	1.00 1.00
Rock outcrop-----	15	Very limited Restrictive substratum Depth to massive bedrock Not rated	1.00 1.00 1.00	Restrictive substratum Depth to massive bedrock Not rated	1.00 1.00 1.00	IIISr Not rated IIISr	1.00 1.00 1.00
RokD: Rockaway, thin fragipan-----	45	Very limited Restrictive substratum Restrictive horizon	1.00 1.00	Restrictive substratum SRB, SRE	1.00 1.00	IIISr IIISr	1.00 1.00
Chatfield-----	25	Very limited Restrictive substratum Depth to massive bedrock	1.00 1.00	Restrictive substratum Depth to massive bedrock	1.00 1.00	IIISr IIISr	1.00 1.00
Rock outcrop-----	20	Very limited Restrictive substratum Depth to massive bedrock Not rated	1.00 1.00 1.00	Restrictive substratum Depth to massive bedrock Not rated	1.00 1.00 1.00	IIISr Not rated IIISr	1.00 1.00 1.00
RooB: Rockaway, thin fragipan-----	50	Very limited Restrictive substratum Restrictive horizon	1.00 1.00	Restrictive substratum SRB, SRE	1.00 1.00	IIISr IIISr	1.00 1.00
Urban land, Rockaway thin fragipan substratum-----	40	Not Rated		Not Rated		Not Rated	
RooC: Rockaway, thin fragipan-----	45	Very limited Restrictive substratum Restrictive horizon	1.00 1.00	Restrictive substratum SRB, SRE	1.00 1.00	IIISr IIISr	1.00 1.00
Urban land, Rockaway thin fragipan substratum-----	40	Not Rated		Not Rated		Not Rated	

Table 19.—Disposal Fields—Continued

Map symbol and soil name	Pct. of map unit	Disposal Field NJAC 7:9A		Type Installation Permitted in NJ		NJ Suitability Class (for each limitation most restrictive class is listed)	
		Rating class and limiting features	Value	Limiting features and permitted system type	Value	Suitability class and limiting feature	Value
RooD: Rockaway, thin fragipan-----	45	Very limited Restrictive substratum Restrictive horizon	1.00 1.00 1.00	Restrictive substratum SRB, SRE	1.00 1.00 1.00	IIIHr IIISr	1.00 1.00
Urban land, Rockaway thin fragipan substratum-----	40	Not Rated		Not Rated		Not Rated	
ScoA: Scio-----	80	Very limited Depth to apparent zone of saturation	1.00	Depth to apparent zone of saturation	1.00	IIIW r	1.00
SwfBc: Swartswood, extremely stony----	90	Very limited Restrictive substratum Restrictive horizon	1.00 1.00 1.00	Restrictive substratum SRB, SRE	1.00 1.00 1.00	IIIHr IIISr	1.00 1.00
SwfCc: Swartswood, extremely stony----	90	Very limited Restrictive substratum Restrictive horizon	1.00 1.00 1.00	Restrictive substratum SRB, SRE	1.00 1.00 1.00	IIIHr IIISr	1.00 1.00
SwfDc: Swartswood, extremely stony----	85	Very limited Restrictive substratum Restrictive horizon	1.00 1.00 1.00	Restrictive substratum SRB, SRE	1.00 1.00 1.00	IIIHr IIISr	1.00 1.00
UccAs: Udifluvents, occasionally flooded-----	90	Very limited Not Permitted - Flooding Depth to apparent zone of saturation	1.00 0.55	Not Permitted - Flooding M	1.00 0.55	Not Permitted - Flooding IIW r	1.00 0.55
UdaB: Udorthents-----	100	Very limited Restrictive substratum Restrictive horizon	1.00 1.00	Restrictive substratum SRB, SRE	1.00 1.00	IIIHr IIISr	1.00 1.00

Table 19.—Disposal Fields—Continued

Map symbol and soil name	Pct. of map unit	Disposal Field NJAC 7:9A		Type Installation Permitted in NJ		NJ Suitability Class (for each limitation most restrictive class is listed)	
		Rating class and limiting features	Value	Limiting features and permitted system type	Value	Suitability class and limiting feature	Value
Udaub:							
Udorthents-----	60	Very limited					
		Restrictive	1.00	Restrictive	1.00	IIHR	1.00
		substratum		substratum			
		Restrictive	1.00	SRB, SRE	1.00	IIISr	1.00
		horizon					
Urban land-----	40	Not Rated		Not Rated		Not Rated	
UnfA:							
Unadilla-----	80	Not limited		C		I	
UnfB:							
Unadilla-----	80	Not limited		C		I	
USCHRB:							
Urban land, Chatfield substratum-----	40	Not Rated		Not Rated		Not Rated	
Chatfield-----	25	Very limited					
		Restrictive	1.00	Restrictive	1.00	IIISr	1.00
		substratum		substratum			
		Depth to massive	1.00	Depth to massive	1.00	IIISr	1.00
		bedrock		bedrock			
Rock outcrop-----	20	Very limited					
		Restrictive	1.00	Restrictive	1.00	IIISr	1.00
		substratum		substratum			
		Depth to massive	1.00	Depth to massive	1.00	Not rated	1.00
		bedrock		bedrock			
		Not rated	1.00	Not rated	1.00	IIISr	1.00
USCHRC:							
Urban land, Chatfield substratum-----	40	Not Rated		Not Rated		Not Rated	
Chatfield-----	25	Very limited					
		Restrictive	1.00	Restrictive	1.00	IIISr	1.00
		substratum		substratum			
		Depth to massive	1.00	Depth to massive	1.00	IIISr	1.00
		bedrock		bedrock			
Rock outcrop-----	20	Very limited					
		Restrictive	1.00	Restrictive	1.00	IIISr	1.00
		substratum		substratum			
		Depth to massive	1.00	Depth to massive	1.00	Not rated	1.00
		bedrock		bedrock			
		Not rated	1.00	Not rated	1.00	IIISr	1.00
USCHRD:							
Urban land, Chatfield substratum-----	40	Not Rated		Not Rated		Not Rated	

Table 19.—Disposal Fields—Continued

Map symbol and soil name	Pct. of map unit	Disposal Field NJAC 7:9A		Type Installation Permitted in NJ		NJ Suitability Class (for each limitation most restrictive class is listed)	
		Rating class and limiting features	Value	Limiting features and permitted system type	Value	Suitability class and limiting feature	Value
USCHRD: (cont.) Chatfield-----	25	Very limited Restrictive substratum Depth to massive bedrock	1.00 1.00	Restrictive substratum Depth to massive bedrock	1.00 1.00	IIISr IIISr	1.00 1.00
Rock outcrop-----	20	Very limited Restrictive substratum Depth to massive bedrock Not rated	1.00 1.00 1.00	Restrictive substratum Depth to massive bedrock Not rated	1.00 1.00 1.00	IIISr Not rated IIISr	1.00 1.00 1.00
USFARC: Urban land, Farmington substratum-----	50	Not Rated		Not Rated		Not Rated	
Farmington-----	30	Very limited Depth to massive bedrock	1.00	Depth to massive bedrock	1.00	IIISr	1.00
Rock outcrop-----	20	Very limited Depth to massive bedrock Not rated	1.00 1.00	Depth to massive bedrock Not rated	1.00 1.00	IIISr Not rated	1.00 1.00
USFARD: Urban land, Farmington substratum-----	40	Not Rated		Not Rated		Not Rated	
Farmington-----	35	Very limited Depth to massive bedrock	1.00	Depth to massive bedrock	1.00	IIISr	1.00
Rock outcrop-----	25	Very limited Depth to massive bedrock Not rated	1.00 1.00	Depth to massive bedrock Not rated	1.00 1.00	IIISr Not rated	1.00 1.00
USFAWB: Urban land, Farmington substratum-----	50	Not Rated		Not Rated		Not Rated	
Farmington-----	30	Very limited Depth to massive bedrock	1.00	Depth to massive bedrock	1.00	IIISr	1.00
Wassaic-----	20	Very limited Depth to massive bedrock	1.00	Depth to massive bedrock	1.00	IIISr	1.00
USHAZA: Urban land, Hazen substratum-----	45	Not Rated		Not Rated		Not Rated	

Table 19.—Disposal Fields—Continued

Map symbol and soil name	Pct. of map unit	Disposal Field NJAC 7:9A		Type Installation Permitted in NJ		NJ Suitability Class (for each limitation most restrictive class is listed)	
		Rating class and limiting features	Value	Limiting features and permitted system type	Value	Suitability class and limiting feature	Value
USHAZA: Hazen-----	35	Not limited		C		I	
Hoosic-----	20	Somewhat limited					
		Excessively coarse horizon	0.99	SRE, M	0.99	IIHc	0.99
		Excessively coarse substratum	0.99	SRE, M	0.99	IISc	0.99
USHAZB: Urban land, Hazen substratum-----	55	Not Rated		Not Rated		Not Rated	
Hazen-----	25	Not limited		C		I	
Hoosic-----	20	Somewhat limited					
		Excessively coarse horizon	0.99	SRE, M	0.99	IIHc	0.99
		Excessively coarse substratum	0.99	SRE, M	0.99	IISc	0.99
USNAMB: Urban land, Nassau substratum-----	45	Not Rated		Not Rated		Not Rated	
Nassau-----	30	Very limited					
		Restrictive substratum	1.00	Restrictive substratum	1.00	IIISr	1.00
		Depth to massive bedrock	1.00	Depth to massive bedrock	1.00	IIISr	1.00
		Excessively coarse horizon	0.99	SRE, M	0.99	IIHc	0.99
Manlius-----	25	Very limited					
		Restrictive substratum	1.00	Restrictive substratum	1.00	IIISr	1.00
		Depth to massive bedrock	1.00	Depth to massive bedrock	1.00	IIISr	1.00
		Excessively coarse horizon	0.99	SRE, M	0.99	IIHc	0.99
USNAMC: Urban land, Nassau substratum-----	55	Not Rated		Not Rated		Not Rated	
Nassau-----	25	Very limited					
		Restrictive substratum	1.00	Restrictive substratum	1.00	IIISr	1.00
		Depth to massive bedrock	1.00	Depth to massive bedrock	1.00	IIISr	1.00
		Excessively coarse horizon	0.99	SRE, M	0.99	IIHc	0.99

Table 19.—Disposal Fields—Continued

Map symbol and soil name	Pct. of map unit	Disposal Field NJAC 7:9A		Type Installation Permitted in NJ		NJ Suitability Class (for each limitation most restrictive class is listed)	
		Rating class and limiting features	Value	Limiting features and permitted system type	Value	Suitability class and limiting feature	Value
USNAMC: (cont.)							
Manlius-----	20	Very limited					
		Restrictive	1.00	Restrictive	1.00	IIISr	1.00
		substratum		substratum			
		Depth to massive	1.00	Depth to massive	1.00	IIISr	1.00
		bedrock		bedrock			
		Excessively	0.99	SRE, M	0.99	IIHc	0.99
		coarse horizon					
USNAMD:							
Urban land, Nassau							
substratum-----	60	Not Rated		Not Rated		Not Rated	
Nassau-----	25	Very limited					
		Restrictive	1.00	Restrictive	1.00	IIISr	1.00
		substratum		substratum			
		Depth to massive	1.00	Depth to massive	1.00	IIISr	1.00
		bedrock		bedrock			
		Excessively	0.99	SRE, M	0.99	IIHc	0.99
		coarse horizon					
Manlius-----	15	Very limited					
		Restrictive	1.00	Restrictive	1.00	IIISr	1.00
		substratum		substratum			
		Depth to massive	1.00	Depth to massive	1.00	IIISr	1.00
		bedrock		bedrock			
		Excessively	0.99	SRE, M	0.99	IIHc	0.99
		coarse horizon					
USWUSB:							
Urban land,							
Wurtsboro							
substratum-----	45	Not Rated		Not Rated		Not Rated	
Wurtsboro-----	35	Very limited					
		Restrictive	1.00	Restrictive	1.00	IIHr	1.00
		substratum		substratum			
		Restrictive	1.00	SRB, SRE	1.00	IIISr	1.00
		horizon					
		Depth to perched	1.00	C drain	1.00	IIIWp	1.00
		zone of					
		saturation					
Swartswood-----	20	Very limited					
		Restrictive	1.00	Restrictive	1.00	IIHr	1.00
		substratum		substratum			
		Restrictive	1.00	SRB, SRE	1.00	IIISr	1.00
		horizon					
VepBc:							
Venango, extremely							
stony-----	90	Very limited					
		Depth to perched	1.00	C drain	1.00	IIIWp	1.00
		zone of					
		saturation					
		Restrictive	1.00	Restrictive	1.00	IIHr	1.00
		substratum		substratum			
		Restrictive	1.00	SRB, SRE	1.00	IIISr	1.00
		horizon					

Table 19.—Disposal Fields—Continued

Map symbol and soil name	Pct. of map unit	Disposal Field NJAC 7:9A		Type Installation Permitted in NJ		NJ Suitability Class (for each limitation most restrictive class is listed)	
		Rating class and limiting features	Value	Limiting features and permitted system type	Value	Suitability class and limiting feature	Value
VepCc: Venango, extremely stony-----	85	Very limited Depth to perched zone of saturation	1.00	C drain	1.00	IIIWp	1.00
		Restrictive substratum	1.00	Restrictive substratum	1.00	IIIHr	1.00
		Restrictive horizon	1.00	SRB, SRE	1.00	IIISr	1.00
WaahAt: Wallkill, frequently flooded-----	90	Very limited Depth to apparent zone of saturation	1.00	Depth to apparent zone of saturation	1.00	Not Permitted - Flooding	1.00
		Not Permitted - Flooding	1.00	Not Permitted - Flooding	1.00	IIIWp	1.00
		Not Permitted - Hydric Soil	1.00	Not Permitted - Hydric Soil	1.00	Not Permitted - Hydric Soil	1.00
WabEb: Wallpack, aeolian mantle, very stony-	85	Not limited		C		I	
WabCb: Wallpack, aeolian mantle, very stony-	85	Not limited		C		I	
WabDb: Wallpack, aeolian mantle, very stony-	85	Not limited		C		I	
WacB: Wallpack-----	85	Very limited Restrictive substratum	1.00	Restrictive substratum	1.00	IIIHr	1.00
		Restrictive horizon	1.00	SRB, SRE	1.00	IIISr	1.00
WacBc: Wallpack, extremely stony-----	85	Very limited Restrictive substratum	1.00	Restrictive substratum	1.00	IIIHr	1.00
		Restrictive horizon	1.00	SRB, SRE	1.00	IIISr	1.00
WacC: Wallpack-----	85	Very limited Restrictive substratum	1.00	Restrictive substratum	1.00	IIIHr	1.00
		Restrictive horizon	1.00	SRB, SRE	1.00	IIISr	1.00

Table 19.—Disposal Fields—Continued

Map symbol and soil name	Pct. of map unit	Disposal Field NJAC 7:9A		Type Installation Permitted in NJ		NJ Suitability Class (for each limitation most restrictive class is listed)	
		Rating class and limiting features	Value	Limiting features and permitted system type	Value	Suitability class and limiting feature	Value
WacCc: Wallpack, extremely stony-----	85	Very limited Restrictive substratum Restrictive horizon	1.00 1.00 1.00	Restrictive substratum SRB, SRE	1.00 1.00 1.00	IIIHr IIISr	1.00 1.00
WacD: Wallpack-----	85	Very limited Restrictive substratum Restrictive horizon	1.00 1.00 1.00	Restrictive substratum SRB, SRE	1.00 1.00 1.00	IIIHr IIISr	1.00 1.00
WacDc: Wallpack, extremely stony-----	85	Very limited Restrictive substratum Restrictive horizon	1.00 1.00 1.00	Restrictive substratum SRB, SRE	1.00 1.00 1.00	IIIHr IIISr	1.00 1.00
WATER: Water-----	100	Not Rated		Not Rated		Not Rated	
WecBc: Wellsboro, extremely stony-----	85	Very limited Restrictive substratum Restrictive horizon Depth to perched zone of saturation	1.00 1.00 1.00 0.99	Restrictive substratum SRB, SRE C drain	1.00 1.00 1.00 0.99	IIIHr IIISr IIWp	1.00 1.00 0.99
WecCc: Wellsboro, extremely stony-----	85	Very limited Restrictive substratum Restrictive horizon Depth to perched zone of saturation	1.00 1.00 1.00 0.99	Restrictive substratum SRB, SRE C drain	1.00 1.00 1.00 0.99	IIIHr IIISr IIWp	1.00 1.00 0.99
WumBc: Wurtsboro, extremely stony-----	85	Very limited Restrictive substratum Restrictive horizon Depth to perched zone of saturation	1.00 1.00 1.00 1.00	Restrictive substratum SRB, SRE C drain	1.00 1.00 1.00 1.00	IIIHr IIISr IIIWp	1.00 1.00 1.00



Table 19.—Disposal Fields—Continued

Map symbol and soil name	Pct. of map unit	Disposal Field NJAC 7:9A		Type Installation Permitted in NJ		NJ Suitability Class (for each limitation most restrictive class is listed)	
		Rating class and limiting features	Value	Limiting features and permitted system type	Value	Suitability class and limiting feature	Value
WusBc: Wurtsboro, extremely stony-----	60	Very limited					
		Restrictive substratum	1.00	Restrictive substratum	1.00	IIIHr	1.00
		Restrictive horizon	1.00	SRB, SRE	1.00	IIISr	1.00
		Depth to perched zone of saturation	1.00	C drain	1.00	IIIWp	1.00
Swartswood, extremely stony----	40	Very limited					
		Restrictive substratum	1.00	Restrictive substratum	1.00	IIIHr	1.00
		Restrictive horizon	1.00	SRB, SRE	1.00	IIISr	1.00
WusCc: Wurtsboro, extremely stony-----	60	Very limited					
		Restrictive substratum	1.00	Restrictive substratum	1.00	IIIHr	1.00
		Restrictive horizon	1.00	SRB, SRE	1.00	IIISr	1.00
		Depth to perched zone of saturation	1.00	C drain	1.00	IIIWp	1.00
Swartswood, extremely stony----	40	Very limited					
		Restrictive substratum	1.00	Restrictive substratum	1.00	IIIHr	1.00
		Restrictive horizon	1.00	SRB, SRE	1.00	IIISr	1.00
WusDc: Wurtsboro, extremely stony-----	80	Very limited					
		Restrictive substratum	1.00	Restrictive substratum	1.00	IIIHr	1.00
		Restrictive horizon	1.00	SRB, SRE	1.00	IIISr	1.00
		Depth to perched zone of saturation	1.00	C drain	1.00	IIIWp	1.00

Table 19.—Disposal Fields—Continued

Map symbol and soil name	Pct. of map unit	Disposal Field NJAC 7:9A		Type Installation Permitted in NJ		NJ Suitability Class (for each limitation most restrictive class is listed)	
		Rating class and limiting features	Value	Limiting features and permitted system type	Value	Suitability class and limiting feature	Value
Swartswood, extremely stony----	20	Very limited					
		Restrictive substratum	1.00	Restrictive substratum	1.00	IIHr	1.00
		Restrictive horizon	1.00	SRB, SRE	1.00	IIISr	1.00

## Type of disposal field installation

C = Conventional installation

C drain = Interceptor drain or other means of removing the perched zone of saturation

SRB = Soil replacement, bottom-lined installation

SRE = Soil replacement, fill enclosed installation

M = Mound installation

NJ Suitability Classes: I, IIHc, IIHr, IIIHr, IISc, IISr, IIISr, IIWp, IIIWp, IIWr, IIIWr

For further explanation of these classes refer to NJAC 7:9A, Standards for Individual Subsurface Sewage Disposal Systems.

Table 20.--Landfills

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
AhbBc: Alden, extremely stony-----	90	Very limited Saturated zone Ponding	1.00 1.00	Very limited Ponding Saturated zone	1.00 1.00	Very limited Ponding Saturated zone	1.00 1.00
AhcBc: Alden, gneiss till substratum, extremely stony----	90	Very limited Saturated zone Ponding Clay content	1.00 1.00 0.50	Very limited Ponding Saturated zone	1.00 1.00	Very limited Ponding Saturated zone Clay content	1.00 1.00 0.50
AruCh: Arnot, very rocky---	55	Very limited Depth to bedrock Slope	1.00 0.01	Very limited Depth to bedrock Slope	1.00 0.01	Very limited Depth to bedrock Gravel content Slope	1.00 0.99 0.01
Lordstown, very rocky-----	40	Very limited Depth to bedrock Slope	1.00 0.01	Very limited Depth to bedrock Slope	1.00 0.01	Very limited Depth to bedrock Gravel content Slope	1.00 0.85 0.01
ArvD: Arnot-----	45	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Depth to bedrock Slope Gravel content	1.00 1.00 0.99
Lordstown-----	40	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Slope Depth to bedrock Gravel content	1.00 1.00 0.85
Rock outcrop-----	15	Not rated		Not rated		Not rated	
ArvE: Arnot-----	60	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Depth to bedrock Slope Gravel content	1.00 1.00 0.99
Lordstown-----	25	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Slope Depth to bedrock Gravel content	1.00 1.00 0.85
Rock outcrop-----	15	Not rated		Not rated		Not rated	

Table 20.—Landfills—Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
AtcA: Atherton, very poorly drained-----	60	Very limited Saturated zone Ponding Seepage	1.00 1.00 1.00	Very limited Ponding Saturated zone	1.00 1.00	Very limited Ponding Saturated zone	1.00 1.00
Atherton, poorly drained-----	30	Very limited Saturated zone	1.00	Very limited Saturated zone	1.00	Very limited Saturated zone	1.00
CatbA: Catden-----	85	Very limited Saturated zone Ponding Organic matter content	1.00 1.00 1.00	Very limited Ponding Saturated zone	1.00 1.00	Very limited Ponding Saturated zone Organic matter content	1.00 1.00 1.00
ChkC: Chatfield-----	45	Very limited Depth to bedrock Slope	1.00 0.01	Very limited Depth to bedrock Seepage Slope	1.00 1.00 0.01	Very limited Depth to bedrock Seepage Slope	1.00 0.21 0.01
Hollis-----	30	Very limited Depth to bedrock Slope	1.00 0.01	Very limited Depth to bedrock Slope	1.00 0.01	Very limited Depth to bedrock Seepage Slope	1.00 0.21 0.01
Rock outcrop-----	25	Not rated		Not rated		Not rated	
ChkE: Chatfield-----	45	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Slope Depth to bedrock Seepage	1.00 1.00 1.00	Very limited Slope Depth to bedrock Seepage	1.00 1.00 0.21
Hollis-----	30	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Depth to bedrock Slope Seepage	1.00 1.00 0.21
Rock outcrop-----	20	Not rated		Not rated		Not rated	
ChwBc: Chippewa, extremely stony-----	80	Very limited Saturated zone Ponding	1.00 1.00	Very limited Ponding Saturated zone	1.00 1.00	Very limited Ponding Saturated zone	1.00 1.00
CorA: Colonie-----	80	Very limited Sand content Seepage	1.00 1.00	Very limited Seepage	1.00	Very limited Sand content Seepage	1.00 1.00
CorB: Colonie-----	80	Very limited Sand content Seepage	1.00 1.00	Very limited Seepage	1.00	Very limited Sand content Seepage	1.00 1.00

Table 20.--Landfills--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
DefAr: Delaware, rarely flooded-----	80	Very limited Seepage Flooding	1.00 0.40	Very limited Seepage Flooding	1.00 0.40	Very limited Seepage	1.00
DefBr: Delaware, rarely flooded-----	80	Very limited Seepage Flooding	1.00 0.40	Very limited Seepage Flooding	1.00 0.40	Very limited Seepage	1.00
FaxC: Farmington-----	50	Very limited Depth to bedrock Slope	1.00 0.01	Very limited Depth to bedrock Slope	1.00 0.01	Very limited Depth to bedrock Slope	1.00 0.01
Rock outcrop-----	40	Not rated		Not rated		Not rated	
FdwB: Farmington-----	40	Very limited Depth to bedrock	1.00	Very limited Depth to bedrock	1.00	Very limited Depth to bedrock	1.00
Wassaic-----	30	Very limited Depth to bedrock Clay content	1.00 0.50	Very limited Depth to bedrock	1.00	Very limited Depth to bedrock Clay content	1.00 0.50
Rock outcrop-----	25	Not rated		Not rated		Not rated	
FmhAs: Fluvaquents, occasionally flooded-----	90	Very limited Flooding Saturated zone Seepage	1.00 1.00 1.00	Very limited Flooding Saturated zone Seepage	1.00 1.00 1.00	Very limited Saturated zone Seepage	1.00 0.52
FrdAb: Fredon, very stony--	45	Very limited Saturated zone Seepage Sand content	1.00 1.00 1.00	Very limited Saturated zone Seepage	1.00 1.00	Very limited Saturated zone Sand content Seepage Gravel content	1.00 1.00 1.00 0.92
Halsey, very stony--	40	Very limited Saturated zone Ponding Seepage Sand content	1.00 1.00 1.00 1.00	Very limited Ponding Saturated zone Seepage	1.00 1.00 1.00	Very limited Ponding Saturated zone Sand content Seepage Gravel content	1.00 1.00 1.00 1.00 0.52
GawEh: Galway, very rocky--	80	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Slope Depth to bedrock Gravel content	1.00 1.00 0.02

Table 20.—Landfills—Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
HdxAb:							
Hazen, very stony---	50	Very limited Seepage	1.00	Very limited Seepage	1.00	Very limited Sand content	1.00
		Sand content	1.00			Seepage	1.00
						Gravel content	0.15
Hoosic, very stony--	40	Very limited Seepage	1.00	Very limited Seepage	1.00	Very limited Sand content	1.00
		Sand content	1.00			Seepage	1.00
						Gravel content	0.96
HdxBb:							
Hazen, very stony---	60	Very limited Seepage	1.00	Very limited Seepage	1.00	Very limited Sand content	1.00
		Sand content	1.00			Seepage	1.00
						Gravel content	0.15
Hoosic, very stony--	35	Very limited Seepage	1.00	Very limited Seepage	1.00	Very limited Sand content	1.00
		Sand content	1.00			Seepage	1.00
						Gravel content	0.96
HhmBc:							
Hibernia, extremely stony-----	80	Very limited Saturated zone	1.00	Very limited Saturated zone	1.00	Very limited Saturated zone	1.00
		Seepage	1.00	Seepage	1.00	Gravel content	0.65
						Seepage	0.50
HkrgBb:							
Hinckley, very stony	85	Very limited Seepage	1.00	Very limited Seepage	1.00	Very limited Sand content	1.00
		Sand content	1.00			Seepage	1.00
		Rock fragments	0.21			Gravel content	0.99
						Rock fragments	0.21
HkrgCb:							
Hinckley, very stony	85	Very limited Seepage	1.00	Very limited Seepage	1.00	Very limited Sand content	1.00
		Sand content	1.00	Slope	0.63	Seepage	1.00
		Slope	0.63			Gravel content	0.99
		Rock fragments	0.21			Slope	0.63
						Rock fragments	0.21
HncD:							
Hollis-----	45	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
						Seepage	0.21
Rock outcrop-----	30	Not rated		Not rated		Not rated	
Chatfield-----	20	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
				Seepage	1.00	Seepage	0.21

Table 20.--Landfills--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill	Value	Area sanitary landfill	Value	Daily cover for landfill	
		Rating class and limiting features		Rating class and limiting features		Rating class and limiting features	Value
HonCb: Hoosic, very stony--	60	Very limited Seepage Sand content Slope	 1.00 1.00 0.63	Very limited Seepage Slope	 1.00 0.63	Very limited Sand content Seepage Gravel content Slope	 1.00 1.00 0.96 0.63
Hazen, very stony---	30	Very limited Seepage Sand content Slope	 1.00 1.00 0.63	Very limited Seepage Slope	 1.00 0.63	Very limited Sand content Seepage Slope Gravel content	 1.00 1.00 0.63 0.15
HopEb: Hoosic, very stony--	50	Very limited Slope Seepage Sand content	 1.00 1.00 1.00	Very limited Slope Seepage	 1.00 1.00	Very limited Slope Sand content Seepage Gravel content	 1.00 1.00 1.00 0.96
Otisville, very stony-----	40	Very limited Slope Seepage Sand content	 1.00 1.00 1.00	Very limited Slope Seepage	 1.00 1.00	Very limited Slope Sand content Seepage Gravel content	 1.00 1.00 1.00 0.47
LacBc: Lackawanna, extremely stony----	85	Not limited		Not limited		Not limited	
LacCc: Lackawanna, extremely stony----	85	Somewhat limited Slope	 0.63	Somewhat limited Slope	 0.63	Somewhat limited Slope	 0.63
LacDc: Lackawanna, extremely stony----	85	Very limited Slope	 1.00	Very limited Slope	 1.00	Very limited Slope	 1.00
LorB: Lordstown-----	50	Very limited Depth to bedrock	 1.00	Very limited Depth to bedrock	 1.00	Very limited Depth to bedrock Gravel content	 1.00 0.85
Wallpack-----	35	Not limited		Not limited		Somewhat limited Gravel content	 0.75
LorC: Lordstown-----	50	Very limited Depth to bedrock Slope	 1.00 0.63	Very limited Depth to bedrock Slope	 1.00 0.63	Very limited Depth to bedrock Gravel content Slope	 1.00 0.85 0.63
Wallpack-----	35	Somewhat limited Slope	 0.63	Somewhat limited Slope	 0.63	Somewhat limited Gravel content Slope	 0.75 0.63

Table 20.—Landfills—Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
LorCh: Lordstown, very rocky-----	50	Very limited Depth to bedrock Slope	1.00 0.63	Very limited Depth to bedrock Slope	1.00 0.63	Very limited Depth to bedrock Gravel content Slope	1.00 0.85 0.63
Wallpack, very rocky	35	Somewhat limited Slope	0.63	Somewhat limited Slope	0.63	Somewhat limited Slope	0.63
LorD: Lordstown-----	50	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Slope Depth to bedrock Gravel content	1.00 1.00 0.85
Wallpack-----	35	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope Gravel content	1.00 0.75
LorDh: Lordstown, very rocky-----	50	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Slope Depth to bedrock Gravel content	1.00 1.00 0.85
Wallpack, very rocky	40	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
MabEh: Manlius, very rocky-	60	Very limited Slope Depth to bedrock Rock fragments	1.00 1.00 0.42	Very limited Slope Depth to bedrock Seepage	1.00 1.00 1.00	Very limited Slope Depth to bedrock Seepage Gravel content Rock fragments	1.00 1.00 0.50 0.42 0.42
Nassau, very rocky--	25	Very limited Slope Depth to bedrock Rock fragments	1.00 1.00 0.39	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Depth to bedrock Slope Seepage Rock fragments Gravel content	1.00 1.00 0.50 0.39 0.37
NauBh: Nassau, very rocky--	50	Very limited Depth to bedrock Rock fragments	1.00 0.15	Very limited Depth to bedrock	1.00	Very limited Depth to bedrock Seepage Rock fragments Gravel content	1.00 0.50 0.15 0.14
Manlius, very rocky-	45	Very limited Depth to bedrock Rock fragments	1.00 0.33	Very limited Depth to bedrock Seepage	1.00 1.00	Very limited Depth to bedrock Seepage Rock fragments Gravel content	1.00 0.50 0.33 0.33



Table 20.--Landfills--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
NauCh: Nassau, very rocky--	55	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	0.63	Slope	0.63	Slope	0.63
		Rock fragments	0.15			Seepage	0.50
						Rock fragments	0.15
						Gravel content	0.14
Manlius, very rocky-	40	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	0.63	Seepage	1.00	Slope	0.63
		Rock fragments	0.33	Slope	0.63	Seepage	0.50
						Rock fragments	0.33
						Gravel content	0.33
NauDh: Nassau, very rocky--	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Rock fragments	0.15			Seepage	0.50
						Rock fragments	0.15
						Gravel content	0.14
Manlius, very rocky-	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Rock fragments	0.33	Seepage	1.00	Seepage	0.50
						Rock fragments	0.33
						Gravel content	0.33
NavE: Nassau-----	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Rock fragments	0.39			Seepage	0.50
						Rock fragments	0.39
						Gravel content	0.37
Rock outcrop-----	45	Not rated		Not rated		Not rated	
OpnCh: Oquaga, very rocky--	55	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	0.63	Slope	0.63	Slope	0.63
		Rock fragments	0.01			Gravel content	0.01
						Rock fragments	0.01
Lackawanna, very rocky-----	30	Somewhat limited		Somewhat limited		Somewhat limited	
		Slope	0.63	Slope	0.63	Slope	0.63
OpnDh: Oquaga, very rocky--	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Rock fragments	0.01			Gravel content	0.01
						Rock fragments	0.01

Table 20.—Landfills—Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
OpnDh: (cont.) Lackawanna, very rocky-----	35	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
OprC: Oquaga-----	75	Very limited Depth to bedrock Rock fragments Slope	1.00 0.01 0.01	Very limited Depth to bedrock Slope	1.00 0.01	Very limited Depth to bedrock Gravel content Rock fragments Slope	1.00 0.01 0.01 0.01
Rock outcrop-----	15	Not rated		Not rated		Not rated	
OprE: Oquaga-----	60	Very limited Slope Depth to bedrock Rock fragments	1.00 1.00 0.01	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Slope Depth to bedrock Gravel content Rock fragments	1.00 1.00 0.01 0.01
Rock outcrop-----	25	Not rated		Not rated		Not rated	
PHG: Pits, sand and gravel-----	95	Not rated		Not rated		Not rated	
PohA: Pompton-----	80	Very limited Saturated zone Seepage Sand content	1.00 1.00 1.00	Very limited Saturated zone Seepage	1.00 1.00	Very limited Saturated zone Sand content Seepage	1.00 1.00 1.00
QY: Pits, quarry-----	100	Not rated		Not rated		Not rated	
RkrB: Riverhead-----	85	Very limited Saturated zone Seepage Sand content	1.00 1.00 1.00	Very limited Saturated zone Seepage	1.00 1.00	Very limited Sand content Seepage Saturated zone	1.00 1.00 1.00 0.24
RnaF: Rock outcrop-----	40	Not rated		Not rated		Not rated	
Arnot-----	30	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Depth to bedrock Slope Gravel content	1.00 1.00 0.99
Rubble land-----	20	Not rated		Very limited Slope Seepage	1.00 1.00	Not rated	
RnfC: Rock outcrop-----	40	Not rated		Not rated		Not rated	
Farmington-----	35	Very limited Depth to bedrock Slope	1.00 0.63	Very limited Depth to bedrock Slope	1.00 0.63	Very limited Depth to bedrock Slope	1.00 0.63

Table 20.--Landfills--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
RnFC: (cont.)							
Galway-----	25	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	0.63	Slope	0.63	Slope	0.63
						Gravel content	0.02
RnFD:							
Rock outcrop-----	50	Not rated		Not rated		Not rated	
Farmington-----	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
Galway-----	10	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
						Gravel content	0.02
RoefBc:							
Rockaway, thin fragipan, extremely stony-----	85	Very limited		Not limited		Very limited	
		Seepage	1.00			Rock fragments	1.00
		Rock fragments	1.00			Seepage	0.50
						Gravel content	0.01
RoefCc:							
Rockaway, thin fragipan, extremely stony-----	85	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Slope	0.63	Rock fragments	1.00
		Rock fragments	1.00			Slope	0.63
		Slope	0.63			Seepage	0.50
						Gravel content	0.01
RoefDc:							
Rockaway, thin fragipan, extremely stony-----	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Seepage	1.00			Rock fragments	1.00
		Rock fragments	1.00			Seepage	0.50
						Gravel content	0.01
RokB:							
Rockaway, thin fragipan-----	50	Very limited		Not limited		Very limited	
		Seepage	1.00			Rock fragments	1.00
		Rock fragments	1.00			Seepage	0.50
						Gravel content	0.01
Chatfield-----	30	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
				Seepage	1.00	Seepage	0.21
Rock outcrop-----	20	Not rated		Not rated		Not rated	

Table 20.—Landfills—Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
RokC: Rockaway, thin fragipan-----	45	Very limited Seepage Rock fragments Slope	1.00 1.00 0.63	Somewhat limited Slope	0.63	Very limited Rock fragments Slope Seepage Gravel content	1.00 0.63 0.50 0.01
Chatfield-----	40	Very limited Depth to bedrock Slope	1.00 0.63	Very limited Depth to bedrock Seepage Slope	1.00 1.00 0.63	Very limited Depth to bedrock Slope Seepage	1.00 0.63 0.21
Rock outcrop-----	15	Not rated		Not rated		Not rated	
RokD: Rockaway, thin fragipan-----	45	Very limited Slope Seepage Rock fragments	1.00 1.00 1.00	Very limited Slope	1.00	Very limited Slope Rock fragments Seepage Gravel content	1.00 1.00 0.50 0.01
Chatfield-----	25	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Slope Depth to bedrock Seepage	1.00 1.00 1.00	Very limited Slope Depth to bedrock Seepage	1.00 1.00 0.21
Rock outcrop-----	20	Not rated		Not rated		Not rated	
RooB: Rockaway, thin fragipan-----	50	Very limited Seepage Rock fragments	1.00 1.00	Not limited		Very limited Rock fragments Seepage Gravel content	1.00 0.50 0.01
Urban land, Rockaway thin fragipan substratum-----	40	Very limited Seepage Rock fragments	1.00 1.00	Very limited Rock fragments	1.00	Very limited Rock fragments Seepage	1.00 0.50
RooC: Rockaway, thin fragipan-----	45	Very limited Seepage Rock fragments Slope	1.00 1.00 0.63	Somewhat limited Slope	0.63	Very limited Rock fragments Slope Seepage Gravel content	1.00 0.63 0.50 0.01
Urban land, Rockaway thin fragipan substratum-----	40	Very limited Seepage Rock fragments	1.00 1.00	Very limited Rock fragments	1.00	Very limited Rock fragments Seepage	1.00 0.50

Table 20.—Landfills—Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
RooD: Rockaway, thin fragipan-----	45	Very limited Slope Seepage Rock fragments	1.00 1.00 1.00	Very limited Slope	1.00	Very limited Slope Rock fragments Seepage Gravel content	1.00 1.00 0.50 0.01
Urban land, Rockaway thin fragipan substratum-----	40	Very limited Seepage Rock fragments	1.00 1.00	Very limited Rock fragments	1.00	Very limited Rock fragments Seepage	1.00 0.50
ScoA: Scio-----	80	Very limited Saturated zone	1.00	Very limited Saturated zone	1.00	Somewhat limited Saturated zone	0.95
SwfBc: Swartswood, extremely stony----	90	Not limited		Very limited Seepage	1.00	Somewhat limited Gravel content	0.24
SwfCc: Swartswood, extremely stony----	90	Somewhat limited Slope	0.63	Very limited Seepage Slope	1.00 0.63	Somewhat limited Slope Gravel content	0.63 0.24
SwfDc: Swartswood, extremely stony----	85	Very limited Slope	1.00	Very limited Slope Seepage	1.00 1.00	Very limited Slope Gravel content	1.00 0.24
UccAs: Udifluvents, occasionally flooded-----	90	Very limited Flooding Saturated zone Seepage Sand content	1.00 1.00 1.00 0.50	Very limited Flooding Saturated zone Seepage	1.00 1.00 1.00	Very limited Seepage Sand content Saturated zone	1.00 0.50 0.01
UdaB: Udorthents-----	100	Very limited Seepage Sand content	1.00 0.50	Very limited Seepage	1.00	Somewhat limited Seepage Sand content	0.50 0.50
UdaB: Udorthents-----	60	Very limited Seepage Sand content	1.00 0.50	Very limited Seepage	1.00	Somewhat limited Seepage Sand content	0.50 0.50
Urban land-----	40	Not rated		Not rated		Not rated	
UnfA: Unadilla-----	80	Very limited Seepage	1.00	Very limited Seepage	1.00	Somewhat limited Seepage	0.50

Table 20.—Landfills—Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
UnfB:							
Unadilla-----	80	Very limited Seepage	1.00	Very limited Seepage	1.00	Somewhat limited Seepage	0.50
USCHRB:							
Urban land, Chatfield substratum-----	40	Very limited Depth to bedrock	1.00	Very limited Depth to bedrock Seepage	1.00 1.00	Very limited Depth to bedrock Seepage	1.00 0.21
Chatfield-----	25	Very limited Depth to bedrock	1.00	Very limited Depth to bedrock Seepage	1.00 1.00	Very limited Depth to bedrock Seepage	1.00 0.21
Rock outcrop-----	20	Not rated		Not rated		Not rated	
USCHRC:							
Urban land, Chatfield substratum-----	40	Very limited Depth to bedrock	1.00	Very limited Depth to bedrock Seepage	1.00 1.00	Very limited Depth to bedrock Seepage	1.00 0.21
Chatfield-----	25	Very limited Depth to bedrock Slope	1.00 0.63	Very limited Depth to bedrock Seepage Slope	1.00 1.00 0.63	Very limited Depth to bedrock Slope Seepage	1.00 0.63 0.21
Rock outcrop-----	20	Not rated		Not rated		Not rated	
USCHRD:							
Urban land, Chatfield substratum-----	40	Very limited Depth to bedrock	1.00	Very limited Depth to bedrock Seepage	1.00 1.00	Very limited Depth to bedrock Seepage	1.00 0.21
Chatfield-----	25	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Slope Depth to bedrock Seepage	1.00 1.00 1.00	Very limited Slope Depth to bedrock Seepage	1.00 1.00 0.21
Rock outcrop-----	20	Not rated		Not rated		Not rated	
USFARC:							
Urban land, Farmington substratum-----	50	Very limited Depth to bedrock	1.00	Very limited Depth to bedrock	1.00	Very limited Depth to bedrock	1.00
Farmington-----	30	Very limited Depth to bedrock Slope	1.00 0.63	Very limited Depth to bedrock Slope	1.00 0.63	Very limited Depth to bedrock Slope	1.00 0.63
Rock outcrop-----	20	Not rated		Not rated		Not rated	

Table 20.--Landfills--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
USFARD: Urban land, Farmington substratum-----	40	Very limited Depth to bedrock	1.00	Very limited Depth to bedrock	1.00	Very limited Depth to bedrock	1.00
Farmington-----	35	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Depth to bedrock Slope	1.00 1.00
Rock outcrop-----	25	Not rated		Not rated		Not rated	
USFAWB: Urban land, Farmington substratum-----	50	Very limited Depth to bedrock	1.00	Very limited Depth to bedrock	1.00	Very limited Depth to bedrock	1.00
Farmington-----	30	Very limited Depth to bedrock	1.00	Very limited Depth to bedrock	1.00	Very limited Depth to bedrock	1.00
Wassaic-----	20	Very limited Depth to bedrock Clay content	1.00 0.50	Very limited Depth to bedrock	1.00	Very limited Depth to bedrock Clay content	1.00 0.50
USHAZA: Urban land, Hazen substratum-----	45	Very limited Seepage Sand content	1.00 1.00	Very limited Seepage	1.00	Very limited Sand content Seepage Gravel content	1.00 1.00 0.09
Hazen-----	35	Very limited Seepage Sand content	1.00 1.00	Very limited Seepage	1.00	Very limited Sand content Seepage Gravel content	1.00 1.00 0.15
Hoosic-----	20	Very limited Seepage Sand content	1.00 1.00	Very limited Seepage	1.00	Very limited Sand content Seepage Gravel content	1.00 1.00 0.96
USHAZB: Urban land, Hazen substratum-----	55	Very limited Seepage Sand content	1.00 1.00	Very limited Seepage	1.00	Very limited Sand content Seepage Gravel content	1.00 1.00 0.09
Hazen-----	25	Very limited Seepage Sand content	1.00 1.00	Very limited Seepage	1.00	Very limited Sand content Seepage Gravel content	1.00 1.00 0.15
Hoosic-----	20	Very limited Seepage Sand content	1.00 1.00	Very limited Seepage	1.00	Very limited Sand content Seepage Gravel content	1.00 1.00 0.96

Table 20.—Landfills—Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
USNAMB:							
Urban land, Nassau substratum-----	45	Very limited Depth to bedrock	1.00	Very limited Depth to bedrock	1.00	Very limited Depth to bedrock	1.00
Nassau-----	30	Very limited Depth to bedrock Rock fragments	1.00 0.15	Very limited Depth to bedrock	1.00	Very limited Depth to bedrock Seepage Rock fragments Gravel content	1.00 0.50 0.15 0.14
Manlius-----	25	Very limited Depth to bedrock Rock fragments	1.00 0.33	Very limited Depth to bedrock Seepage	1.00 1.00	Very limited Depth to bedrock Seepage Rock fragments Gravel content	1.00 0.50 0.33 0.33
USNAMC:							
Urban land, Nassau substratum-----	55	Very limited Depth to bedrock	1.00	Very limited Depth to bedrock	1.00	Very limited Depth to bedrock	1.00
Nassau-----	25	Very limited Depth to bedrock Slope Rock fragments	1.00 0.63 0.15	Very limited Depth to bedrock Slope	1.00 0.63	Very limited Depth to bedrock Slope Seepage Rock fragments Gravel content	1.00 0.63 0.50 0.15 0.14
Manlius-----	20	Very limited Depth to bedrock Slope Rock fragments	1.00 0.63 0.33	Very limited Depth to bedrock Seepage Slope	1.00 1.00 0.63	Very limited Depth to bedrock Slope Seepage Rock fragments Gravel content	1.00 0.63 0.50 0.33 0.33
USNAMD:							
Urban land, Nassau substratum-----	60	Very limited Depth to bedrock	1.00	Very limited Depth to bedrock	1.00	Very limited Depth to bedrock	1.00
Nassau-----	25	Very limited Slope Depth to bedrock Rock fragments	1.00 1.00 0.15	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Depth to bedrock Slope Seepage Rock fragments Gravel content	1.00 1.00 0.50 0.15 0.14
Manlius-----	15	Very limited Slope Depth to bedrock Rock fragments	1.00 1.00 0.33	Very limited Slope Depth to bedrock Seepage	1.00 1.00 1.00	Very limited Slope Depth to bedrock Seepage Rock fragments Gravel content	1.00 1.00 0.50 0.33 0.33
USWUSB:							
Urban land, Wurtsboro substratum-----	45	Very limited Saturated zone	1.00	Very limited Seepage Saturated zone	1.00 0.99	Very limited Saturated zone	0.99



Table 20.--Landfills--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill	Value	Area sanitary landfill	Value	Daily cover for landfill	
		Rating class and limiting features		Rating class and limiting features		Rating class and limiting features	Value
USWUSB:							
Wurtsboro-----	35	Very limited Saturated zone	1.00	Very limited Seepage Saturated zone	1.00 0.99	Very limited Saturated zone Gravel content	0.99 0.01
Swartswood-----	20	Not limited		Very limited Seepage	1.00	Somewhat limited Gravel content	0.24
VepBc:							
Venango, extremely stony-----	90	Very limited Saturated zone Clay content	1.00 0.50	Very limited Saturated zone	1.00	Very limited Saturated zone Clay content	1.00 0.50
VepCc:							
Venango, extremely stony-----	85	Very limited Saturated zone Slope Clay content	1.00 0.63 0.50	Very limited Saturated zone Slope	1.00 0.63	Very limited Saturated zone Slope Clay content	1.00 0.63 0.50
WaahAt:							
Wallkill, frequently flooded-----	90	Very limited Flooding Saturated zone Ponding Organic matter content Seepage	1.00 1.00 1.00 1.00 1.00	Very limited Flooding Ponding Saturated zone Seepage	1.00 1.00 1.00 1.00	Very limited Ponding Saturated zone Organic matter content Seepage	1.00 1.00 1.00 0.50
WabBb:							
Wallpack, aeolian mantle, very stony-	85	Not limited		Not limited		Not limited	
WabCb:							
Wallpack, aeolian mantle, very stony-	85	Somewhat limited Slope	0.63	Somewhat limited Slope	0.63	Somewhat limited Slope	0.63
WabDb:							
Wallpack, aeolian mantle, very stony-	85	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
WacB:							
Wallpack-----	85	Not limited		Not limited		Somewhat limited Gravel content	0.75
WacBc:							
Wallpack, extremely stony-----	85	Not limited		Not limited		Not limited	
WacC:							
Wallpack-----	85	Somewhat limited Slope	0.63	Somewhat limited Slope	0.63	Somewhat limited Gravel content Slope	0.75 0.63

Table 20.—Landfills—Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill	Value	Area sanitary landfill	Value	Daily cover for landfill	
		Rating class and limiting features		Rating class and limiting features		Rating class and limiting features	Value
WacCc: Wallpack, extremely stony-----	85	Somewhat limited Slope	0.63	Somewhat limited Slope	0.63	Somewhat limited Slope	0.63
WacD: Wallpack-----	85	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope Gravel content	1.00 0.75
WacDc: Wallpack, extremely stony-----	85	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
WATER: Water-----	100	Not rated		Not rated		Not rated	
WecBc: Wellsboro, extremely stony-----	85	Very limited Saturated zone	0.99	Somewhat limited Saturated zone	0.75	Somewhat limited Saturated zone	0.86
WecCc: Wellsboro, extremely stony-----	85	Very limited Saturated zone Slope	0.99 0.63	Somewhat limited Saturated zone Slope	0.75 0.63	Somewhat limited Saturated zone Slope	0.86 0.63
WumBc: Wurtsboro, extremely stony-----	85	Very limited Saturated zone	1.00	Very limited Seepage Saturated zone	1.00 0.99	Very limited Saturated zone Gravel content	0.99 0.01
WusBc: Wurtsboro, extremely stony-----	60	Very limited Saturated zone	1.00	Very limited Seepage Saturated zone	1.00 0.99	Very limited Saturated zone Gravel content	0.99 0.01
Swartswood, extremely stony----	40	Not limited		Very limited Seepage	1.00	Somewhat limited Gravel content	0.24
WusCc: Wurtsboro, extremely stony-----	60	Very limited Saturated zone Slope	1.00 0.63	Very limited Seepage Saturated zone Slope	1.00 0.99 0.63	Very limited Saturated zone Slope Gravel content	0.99 0.63 0.01
Swartswood, extremely stony----	40	Somewhat limited Slope	0.63	Very limited Seepage Slope	1.00 0.63	Somewhat limited Slope Gravel content	0.63 0.24

Table 20.-Landfills-Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
WusDc: Wurtsboro, extremely stony-----	80	Very limited Saturated zone Slope	1.00 1.00	Very limited Slope Seepage Saturated zone	1.00 1.00 0.99	Very limited Slope Saturated zone Gravel content	1.00 0.99 0.01
Swartswood, extremely stony----	20	Very limited Slope	1.00	Very limited Slope Seepage	1.00 1.00	Very limited Slope Gravel content	1.00 0.24

Table 21.—Agricultural Disposal of Manure,  
Food-Processing Waste, and Sewage Sludge

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct. of map unit	Application of manure and food- processing waste		Application of sewage sludge	
		Rating class and limiting features	Value	Rating class and limiting features	Value
AhbBc: Alden, extremely stony-----	90	Very limited		Very limited	
		Ponding	1.00	Ponding	1.00
		Saturated zone	1.00	Saturated zone	1.00
		Stoniness	1.00	Poor filter	0.99
		Poor filter	0.99	Low pH	0.96
		Slow permeability	0.50	Slow permeability	0.37
AhcBc: Alden, gneiss till substratum, extremely stony----	90	Very limited		Very limited	
		Ponding	1.00	Ponding	1.00
		Saturated zone	1.00	Saturated zone	1.00
		Stoniness	1.00	Poor filter	0.99
		Poor filter	0.99	Low pH	0.96
		Slow permeability	0.50	Slow permeability	0.37
AruCh: Arnot, very rocky---	55	Very limited		Very limited	
		Depth to bedrock	1.00	Droughty	1.00
		Droughty	1.00	Depth to bedrock	1.00
		Stoniness	1.00	Poor filter	0.99
		Poor filter	0.99	Low pH	0.96
		Runoff	0.40	Slope	0.01
Lordstown, very rocky-----	40	Very limited		Somewhat limited	
		Stoniness	1.00	Poor filter	0.99
		Poor filter	0.99	Low pH	0.96
		Droughty	0.41	Droughty	0.41
		Low pH	0.37	Depth to bedrock	0.06
		Depth to bedrock	0.06	Slope	0.01
ArvD: Arnot-----	45	Very limited		Very limited	
		Slope	1.00	Droughty	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Droughty	1.00	Slope	1.00
		Stoniness	1.00	Poor filter	0.99
		Poor filter	0.99	Low pH	0.96
Lordstown-----	40	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Stoniness	1.00	Poor filter	0.99
		Poor filter	0.99	Low pH	0.96
		Droughty	0.41	Droughty	0.41
		Low pH	0.37	Depth to bedrock	0.06
Rock outcrop-----	15	Not rated		Not rated	

Table 21.-Agricultural Disposal of Manure,  
Food-Processing Waste, and Sewage Sludge-Continued

Map symbol and soil name	Pct. of map unit	Application of manure and food- processing waste		Application of sewage sludge	
		Rating class and limiting features	Value	Rating class and limiting features	Value
ArvE:					
Arnot-----	60	Very limited		Very limited	
		Slope	1.00	Droughty	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Droughty	1.00	Slope	1.00
		Stoniness	1.00	Poor filter	0.99
		Poor filter	0.99	Low pH	0.96
Lordstown-----	25	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Stoniness	1.00	Poor filter	0.99
		Poor filter	0.99	Low pH	0.96
		Droughty	0.41	Droughty	0.41
		Low pH	0.37	Depth to bedrock	0.06
Rock outcrop-----	15	Not rated		Not rated	
AtcA:					
Atherton, very poorly drained----	60	Very limited		Very limited	
		Ponding	1.00	Ponding	1.00
		Saturated zone	1.00	Saturated zone	1.00
		Poor filter	0.99	Poor filter	0.99
		Leaching	0.70	Low pH	0.96
		Low pH	0.37		
Atherton, poorly drained-----	30	Very limited		Very limited	
		Saturated zone	1.00	Saturated zone	1.00
		Leaching	0.70	Low pH	0.07
		Low pH	0.02		
		Low adsorption	0.01		
CatbA:					
Catden-----	85	Very limited		Very limited	
		Ponding	1.00	Ponding	1.00
		Saturated zone	1.00	Saturated zone	1.00
		Leaching	0.70	Low pH	1.00
		Low pH	0.62		
ChkC:					
Chatfield-----	45	Very limited		Somewhat limited	
		Stoniness	1.00	Poor filter	0.99
		Poor filter	0.99	Low pH	0.96
		Depth to bedrock	0.46	Depth to bedrock	0.46
		Low pH	0.37	Droughty	0.29
		Droughty	0.29	Slope	0.01
Hollis-----	30	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Stoniness	1.00	Droughty	1.00
		Droughty	1.00	Poor filter	0.99
		Poor filter	0.99	Low pH	0.96
		Runoff	0.40	Slope	0.01
Rock outcrop-----	25	Not rated		Not rated	

Table 21.—Agricultural Disposal of Manure,  
Food-Processing Waste, and Sewage Sludge—Continued

Map symbol and soil name	Pct. of map unit	Application of manure and food- processing waste		Application of sewage sludge	
		Rating class and limiting features	Value	Rating class and limiting features	Value
ChkE:					
Chatfield-----	45	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Stoniness	1.00	Poor filter	0.99
		Poor filter	0.99	Low pH	0.96
		Depth to bedrock	0.46	Depth to bedrock	0.46
		Low pH	0.37	Droughty	0.29
Hollis-----	30	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Slope	1.00
		Stoniness	1.00	Droughty	1.00
		Droughty	1.00	Poor filter	0.99
		Poor filter	0.99	Low pH	0.96
Rock outcrop-----	20	Not rated		Not rated	
ChwBc:					
Chippewa, extremely stony-----	80	Very limited		Very limited	
		Slow permeability	1.00	Ponding	1.00
		Ponding	1.00	Saturated zone	1.00
		Saturated zone	1.00	Slow permeability	1.00
		Fragipan	1.00	Poor filter	0.99
		Stoniness	1.00	Low pH	0.96
CorA:					
Colonie-----	80	Somewhat limited		Very limited	
		Leaching	0.45	Low adsorption	1.00
		Droughty	0.41	Droughty	0.41
		Low pH	0.01	Low pH	0.03
CorB:					
Colonie-----	80	Somewhat limited		Very limited	
		Leaching	0.45	Low adsorption	1.00
		Droughty	0.41	Droughty	0.41
		Low pH	0.01	Low pH	0.03
DefAr:					
Delaware, rarely flooded-----	80	Somewhat limited		Somewhat limited	
		Poor filter	0.99	Poor filter	0.99
		Low pH	0.32	Low pH	0.91
				Flooding	0.40
DefBr:					
Delaware, rarely flooded-----	80	Very limited		Very limited	
		Poor filter	0.99	Poor filter	0.99
		Low pH	0.32	Low pH	0.91
				Flooding	0.40
FaxC:					
Farmington-----	50	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Stoniness	1.00	Droughty	1.00
		Droughty	1.00	Poor filter	0.99
		Poor filter	0.99	Low pH	0.96
		Runoff	0.40	Slope	0.01
Rock outcrop-----	40	Not rated		Not rated	

Table 21.—Agricultural Disposal of Manure,  
Food-Processing Waste, and Sewage Sludge—Continued

Map symbol and soil name	Pct. of map unit	Application of manure and food- processing waste		Application of sewage sludge	
		Rating class and limiting features	Value	Rating class and limiting features	Value
<b>FdwB:</b>					
Farmington-----	40	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Stoniness	1.00	Droughty	1.00
		Droughty	1.00	Poor filter	0.99
		Poor filter	0.99	Low pH	0.96
		Runoff	0.40		
<b>Wassaic-----</b>	<b>30</b>	<b>Very limited</b>		<b>Somewhat limited</b>	
		Stoniness	1.00	Poor filter	0.99
		Poor filter	0.99	Low pH	0.96
		Depth to bedrock	0.65	Depth to bedrock	0.65
		Droughty	0.48	Droughty	0.48
		Low pH	0.37		
<b>Rock outcrop-----</b>	<b>25</b>	<b>Not rated</b>		<b>Not rated</b>	
<b>FmhAs:</b>					
Fluvaquents, occasionally flooded-----	90	Very limited		Very limited	
		Saturated zone	1.00	Saturated zone	1.00
		Leaching	0.70	Flooding	1.00
		Flooding	0.60	Low pH	0.42
		Low pH	0.11		
<b>FrdAb:</b>					
Fredon, very stony--	45	Very limited		Very limited	
		Saturated zone	1.00	Saturated zone	1.00
		Poor filter	0.99	Poor filter	0.99
		High permeability	0.95	Low pH	0.96
		Runoff	0.40	High permeability	0.95
		Low pH	0.37	Droughty	0.03
<b>Halsey, very stony--</b>	<b>40</b>	<b>Very limited</b>		<b>Very limited</b>	
		Ponding	1.00	Ponding	1.00
		Saturated zone	1.00	Saturated zone	1.00
		Poor filter	0.99	Poor filter	0.99
		High permeability	0.99	High permeability	0.99
		Leaching	0.70	Low pH	0.96
<b>GawEh:</b>					
Galway, very rocky--	80	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Stoniness	1.00	Poor filter	0.99
		Poor filter	0.99	Low pH	0.96
		Depth to bedrock	0.90	Depth to bedrock	0.90
		Droughty	0.83	Droughty	0.83
<b>HdxAb:</b>					
Hazen, very stony---	50	Somewhat limited		Somewhat limited	
		Poor filter	0.99	Poor filter	0.99
		Low pH	0.37	Low pH	0.96
		Droughty	0.25	Droughty	0.25
		Stoniness	0.19		

Table 21.—Agricultural Disposal of Manure,  
Food-Processing Waste, and Sewage Sludge—Continued

Map symbol and soil name	Pct. of map unit	Application of manure and food- processing waste		Application of sewage sludge	
		Rating class and limiting features	Value	Rating class and limiting features	Value
HdxAb: (cont.)					
Hoosic, very stony--	40	Very limited		Very limited	
		Poor filter	1.00	Poor filter	1.00
		Droughty	0.42	Low pH	0.96
		Low pH	0.37	Droughty	0.42
		Stoniness	0.19		
HdxBb:					
Hazen, very stony---	60	Somewhat limited		Somewhat limited	
		Poor filter	0.99	Poor filter	0.99
		Low pH	0.37	Low pH	0.96
		Droughty	0.25	Droughty	0.25
		Stoniness	0.19		
Hoosic, very stony--	35	Very limited		Very limited	
		Poor filter	1.00	Poor filter	1.00
		Droughty	0.42	Low pH	0.96
		Low pH	0.37	Droughty	0.42
		Stoniness	0.19		
HhmBc:					
Hibernia, extremely stony-----	80	Very limited		Very limited	
		Slow permeability	1.00	Saturated zone	1.00
		Saturated zone	1.00	Slow permeability	1.00
		Stoniness	1.00	Poor filter	0.99
		Fragipan	1.00	Low pH	0.96
		Poor filter	0.99		
HkrgBb:					
Hinckley, very stony	85	Very limited		Very limited	
		Droughty	1.00	Droughty	1.00
		Poor filter	0.99	Poor filter	0.99
		Leaching	0.45	Low pH	0.96
		Low pH	0.37		
		Stoniness	0.19		
HkrgCb:					
Hinckley, very stony	85	Very limited		Very limited	
		Droughty	1.00	Droughty	1.00
		Poor filter	0.99	Poor filter	0.99
		Slope	0.63	Low pH	0.96
		Leaching	0.45	Slope	0.63
		Low pH	0.37		
HncD:					
Hollis-----	45	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Slope	1.00
		Stoniness	1.00	Droughty	1.00
		Droughty	1.00	Poor filter	0.99
		Poor filter	0.99	Low pH	0.96
Rock outcrop-----	30	Not rated		Not rated	
Chatfield-----	20	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Stoniness	1.00	Poor filter	0.99
		Poor filter	0.99	Low pH	0.96
		Depth to bedrock	0.46	Depth to bedrock	0.46
		Low pH	0.37	Droughty	0.29



Table 21.—Agricultural Disposal of Manure,  
Food-Processing Waste, and Sewage Sludge—Continued

Map symbol and soil name	Pct. of map unit	Application of manure and food- processing waste		Application of sewage sludge	
		Rating class and limiting features	Value	Rating class and limiting features	Value
HonCb: Hoosic, very stony--	60	Very limited Poor filter Slope Droughty Low pH Stoniness	 1.00 0.63 0.42 0.37 0.19	Very limited Poor filter Low pH Slope Droughty	 1.00 0.96 0.63 0.42
Hazen, very stony---	30	Somewhat limited Poor filter Slope Low pH Droughty Stoniness	 0.99 0.63 0.37 0.25 0.19	Somewhat limited Poor filter Low pH Slope Droughty	 0.99 0.96 0.63 0.25
HopEb: Hoosic, very stony--	50	Very limited Slope Poor filter Droughty Low pH Stoniness	 1.00 1.00 0.42 0.37 0.19	Very limited Poor filter Slope Low pH Droughty	 1.00 1.00 0.96 0.42
Otisville, very stony-----	40	Very limited Slope Droughty Poor filter Leaching Low pH	 1.00 1.00 0.99 0.45 0.37	Very limited Droughty Slope Poor filter Low pH	 1.00 1.00 0.99 0.96
LacBc: Lackawanna, extremely stony----	85	Very limited Slow permeability Stoniness Poor filter Low pH	 1.00 1.00 0.99 0.37	Very limited Slow permeability Poor filter Low pH	 1.00 0.99 0.96
LacCc: Lackawanna, extremely stony----	85	Very limited Slow permeability Stoniness Poor filter Slope Low pH	 1.00 1.00 0.99 0.63 0.37	Very limited Slow permeability Poor filter Low pH Slope	 1.00 0.99 0.96 0.63
LacDc: Lackawanna, extremely stony----	85	Very limited Slope Slow permeability Stoniness Poor filter Low pH	 1.00 1.00 1.00 0.99 0.37	Very limited Slope Slow permeability Poor filter Low pH	 1.00 1.00 0.99 0.96

Table 21.—Agricultural Disposal of Manure,  
Food-Processing Waste, and Sewage Sludge—Continued

Map symbol and soil name	Pct. of map unit	Application of manure and food- processing waste		Application of sewage sludge	
		Rating class and limiting features	Value	Rating class and limiting features	Value
LorB:					
Lordstown-----	50	Somewhat limited		Somewhat limited	
		Poor filter	0.99	Poor filter	0.99
		Droughty	0.41	Low pH	0.96
		Low pH	0.37	Droughty	0.41
		Depth to bedrock	0.06	Depth to bedrock	0.06
Wallpack-----	35	Very limited		Very limited	
		Fragipan	1.00	Slow permeability	1.00
		Slow permeability	1.00	Low pH	0.91
		Low pH	0.32		
LorC:					
Lordstown-----	50	Somewhat limited		Somewhat limited	
		Poor filter	0.99	Poor filter	0.99
		Slope	0.63	Low pH	0.96
		Droughty	0.41	Slope	0.63
		Low pH	0.37	Droughty	0.41
		Depth to bedrock	0.06	Depth to bedrock	0.06
Wallpack-----	35	Very limited		Very limited	
		Fragipan	1.00	Slow permeability	1.00
		Slow permeability	1.00	Low pH	0.91
		Slope	0.63	Slope	0.63
		Low pH	0.32		
LorCh:					
Lordstown, very rocky-----	50	Very limited		Somewhat limited	
		Stoniness	1.00	Poor filter	0.99
		Poor filter	0.99	Low pH	0.96
		Slope	0.63	Slope	0.63
		Droughty	0.41	Droughty	0.41
		Low pH	0.37	Depth to bedrock	0.06
Wallpack, very rocky	35	Very limited		Very limited	
		Stoniness	1.00	Slow permeability	1.00
		Slow permeability	1.00	Poor filter	0.99
		Fragipan	1.00	Low pH	0.96
		Poor filter	0.99	Slope	0.63
		Slope	0.63		
LorD:					
Lordstown-----	50	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Poor filter	0.99	Poor filter	0.99
		Droughty	0.41	Low pH	0.96
		Low pH	0.37	Droughty	0.41
		Depth to bedrock	0.06	Depth to bedrock	0.06
Wallpack-----	35	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Fragipan	1.00	Slow permeability	1.00
		Slow permeability	1.00	Low pH	0.91
		Low pH	0.32		

Table 21.—Agricultural Disposal of Manure,  
Food-Processing Waste, and Sewage Sludge—Continued

Map symbol and soil name	Pct. of map unit	Application of manure and food- processing waste		Application of sewage sludge	
		Rating class and limiting features	Value	Rating class and limiting features	Value
LorDh: Lordstown, very rocky-----	50	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Stoniness	1.00	Poor filter	0.99
		Poor filter	0.99	Low pH	0.96
		Droughty	0.41	Droughty	0.41
		Low pH	0.37	Depth to bedrock	0.06
Wallpack, very rocky	40	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Stoniness	1.00	Slow permeability	1.00
		Slow permeability	1.00	Poor filter	0.99
		Fragipan	1.00	Low pH	0.96
		Poor filter	0.99		
MabEh: Manlius, very rocky-	60	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Stoniness	1.00	Droughty	1.00
		Droughty	1.00	Poor filter	0.99
		Poor filter	0.99	Low pH	0.96
		Depth to bedrock	0.71	Depth to bedrock	0.71
Nassau, very rocky--	25	Very limited		Very limited	
		Slope	1.00	Droughty	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Droughty	1.00	Slope	1.00
		Stoniness	1.00	Poor filter	0.99
		Poor filter	0.99	Low pH	0.96
NauBh: Nassau, very rocky--	50	Very limited		Very limited	
		Depth to bedrock	1.00	Droughty	1.00
		Droughty	1.00	Depth to bedrock	1.00
		Stoniness	1.00	Cobble content	0.50
		Cobble content	0.50		
		Runoff	0.40		
Manlius, very rocky-	45	Very limited		Very limited	
		Stoniness	1.00	Droughty	1.00
		Droughty	1.00	Cobble content	0.75
		Cobble content	0.75	Depth to bedrock	0.54
		Depth to bedrock	0.54		
NauCh: Nassau, very rocky--	55	Very limited		Very limited	
		Depth to bedrock	1.00	Droughty	1.00
		Droughty	1.00	Depth to bedrock	1.00
		Stoniness	1.00	Slope	0.63
		Slope	0.63	Cobble content	0.50
		Cobble content	0.50		
Manlius, very rocky-	40	Very limited		Very limited	
		Stoniness	1.00	Droughty	1.00
		Droughty	1.00	Cobble content	0.75
		Cobble content	0.75	Slope	0.63
		Slope	0.63	Depth to bedrock	0.54
		Depth to bedrock	0.54		

Table 21.—Agricultural Disposal of Manure,  
Food-Processing Waste, and Sewage Sludge—Continued

Map symbol and soil name	Pct. of map unit	Application of manure and food- processing waste		Application of sewage sludge	
		Rating class and limiting features	Value	Rating class and limiting features	Value
NauDh: Nassau, very rocky--	50	Very limited Slope Depth to bedrock Droughty Stoniness Cobble content	 1.00 1.00 1.00 1.00 0.50	Very limited Droughty Depth to bedrock Slope Cobble content	 1.00 1.00 1.00 0.50
Manlius, very rocky-	40	Very limited Slope Stoniness Droughty Cobble content Depth to bedrock	 1.00 1.00 1.00 0.75 0.54	Very limited Slope Droughty Cobble content Depth to bedrock	 1.00 1.00 0.75 0.54
NavE: Nassau-----	50	Very limited Slope Depth to bedrock Droughty Stoniness Poor filter	 1.00 1.00 1.00 1.00 0.99	Very limited Droughty Depth to bedrock Slope Poor filter Low pH	 1.00 1.00 1.00 0.99 0.96
Rock outcrop-----	45	Not rated		Not rated	
OpnCh: Oquaga, very rocky--	55	Very limited Stoniness Droughty Poor filter Depth to bedrock Slope	 1.00 1.00 0.99 0.84 0.63	Very limited Droughty Poor filter Low pH Depth to bedrock Slope	 1.00 0.99 0.96 0.84 0.63
Lackawanna, very rocky-----	30	Very limited Slow permeability Stoniness Poor filter Slope Low pH	 1.00 1.00 0.99 0.63 0.37	Very limited Slow permeability Poor filter Low pH Slope	 1.00 0.99 0.96 0.63
OpnDh: Oquaga, very rocky--	50	Very limited Slope Stoniness Droughty Poor filter Depth to bedrock	 1.00 1.00 1.00 0.99 0.84	Very limited Slope Droughty Poor filter Low pH Depth to bedrock	 1.00 1.00 0.99 0.96 0.84
Lackawanna, very rocky-----	35	Very limited Slope Slow permeability Stoniness Poor filter Low pH	 1.00 1.00 1.00 0.99 0.37	Very limited Slope Slow permeability Poor filter Low pH	 1.00 1.00 0.99 0.96

Table 21.-Agricultural Disposal of Manure,  
Food-Processing Waste, and Sewage Sludge-Continued

Map symbol and soil name	Pct. of map unit	Application of manure and food- processing waste		Application of sewage sludge	
		Rating class and limiting features	Value	Rating class and limiting features	Value
OprC:					
Oquaga-----	75	Very limited		Very limited	
		Stoniness	1.00	Droughty	1.00
		Droughty	1.00	Poor filter	0.99
		Poor filter	0.99	Low pH	0.96
		Depth to bedrock	0.84	Depth to bedrock	0.84
		Low pH	0.37	Slope	0.01
Rock outcrop-----	15	Not rated		Not rated	
OprE:					
Oquaga-----	60	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Stoniness	1.00	Droughty	1.00
		Droughty	1.00	Poor filter	0.99
		Poor filter	0.99	Low pH	0.96
		Depth to bedrock	0.84	Depth to bedrock	0.84
Rock outcrop-----	25	Not rated		Not rated	
PHG:					
Pits, sand and gravel-----	95	Not rated		Not rated	
PohA:					
Pompton-----	80	Very limited		Very limited	
		Poor filter	1.00	Poor filter	1.00
		Saturated zone	1.00	Saturated zone	1.00
		Leaching	0.70	Low pH	0.99
		Low pH	0.43		
QY:					
Pits, quarry-----	100	Not rated		Not rated	
RkrB:					
Riverhead-----	85	Very limited		Very limited	
		Poor filter	1.00	Poor filter	1.00
		Low pH	0.73	Low pH	1.00
		Saturated zone	0.68	Saturated zone	0.68
		Droughty	0.18	Droughty	0.18
RnaF:					
Rock outcrop-----	40	Not rated		Not rated	
Arnot-----	30	Very limited		Very limited	
		Slope	1.00	Droughty	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Droughty	1.00	Slope	1.00
		Stoniness	1.00	Poor filter	0.99
		Poor filter	0.99	Low pH	0.96
Rubble land-----	20	Not rated		Not rated	
RnfC:					
Rock outcrop-----	40	Not rated		Not rated	

Table 21.—Agricultural Disposal of Manure,  
Food-Processing Waste, and Sewage Sludge—Continued

Map symbol and soil name	Pct. of map unit	Application of manure and food- processing waste		Application of sewage sludge	
		Rating class and limiting features	Value	Rating class and limiting features	Value
RnfC: (cont.)					
Farmington-----	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Stoniness	1.00	Droughty	1.00
		Droughty	1.00	Poor filter	0.99
		Poor filter	0.99	Low pH	0.96
		Slope	0.63	Slope	0.63
Galway-----	25	Very limited		Somewhat limited	
		Stoniness	1.00	Poor filter	0.99
		Poor filter	0.99	Low pH	0.96
		Depth to bedrock	0.90	Depth to bedrock	0.90
		Droughty	0.83	Droughty	0.83
		Slope	0.63	Slope	0.63
RnfD:					
Rock outcrop-----	50	Not rated		Not rated	
Farmington-----	40	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Slope	1.00
		Stoniness	1.00	Droughty	1.00
		Droughty	1.00	Poor filter	0.99
		Poor filter	0.99	Low pH	0.96
Galway-----	10	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Stoniness	1.00	Poor filter	0.99
		Poor filter	0.99	Low pH	0.96
		Depth to bedrock	0.90	Depth to bedrock	0.90
		Droughty	0.83	Droughty	0.83
RoefBc:					
Rockaway, thin fragipan, extremely stony-----	85	Very limited		Very limited	
		Slow permeability	1.00	Slow permeability	1.00
		Stoniness	1.00	Poor filter	0.99
		Poor filter	0.99	Low pH	0.96
		Droughty	0.75	Droughty	0.75
		Low pH	0.37		
RoefCc:					
Rockaway, thin fragipan, extremely stony-----	85	Very limited		Very limited	
		Slow permeability	1.00	Slow permeability	1.00
		Stoniness	1.00	Poor filter	0.99
		Poor filter	0.99	Low pH	0.96
		Droughty	0.75	Droughty	0.75
		Slope	0.63	Slope	0.63
RoefDc:					
Rockaway, thin fragipan, extremely stony-----	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Slow permeability	1.00	Slow permeability	1.00
		Stoniness	1.00	Poor filter	0.99
		Poor filter	0.99	Low pH	0.96
		Droughty	0.75	Droughty	0.75

Table 21.—Agricultural Disposal of Manure,  
Food-Processing Waste, and Sewage Sludge—Continued

Map symbol and soil name	Pct. of map unit	Application of manure and food- processing waste		Application of sewage sludge	
		Rating class and limiting features	Value	Rating class and limiting features	Value
RokB: Rockaway, thin fragipan-----	50	Very limited Slow permeability Stoniness Poor filter Droughty Low pH	1.00 1.00 0.99 0.75 0.37	Very limited Slow permeability Poor filter Low pH Droughty	1.00 0.99 0.96 0.75
Chatfield-----	30	Very limited Stoniness Poor filter Depth to bedrock Low pH Droughty	1.00 0.99 0.46 0.37 0.29	Somewhat limited Poor filter Low pH Depth to bedrock Droughty	0.99 0.96 0.46 0.29
Rock outcrop-----	20	Not rated		Not rated	
RokC: Rockaway, thin fragipan-----	45	Very limited Slow permeability Stoniness Poor filter Droughty Slope	1.00 1.00 0.99 0.75 0.63	Very limited Slow permeability Poor filter Low pH Droughty Slope	1.00 0.99 0.96 0.75 0.63
Chatfield-----	40	Very limited Stoniness Poor filter Slope Depth to bedrock Low pH	1.00 0.99 0.63 0.46 0.37	Somewhat limited Poor filter Low pH Slope Depth to bedrock Droughty	0.99 0.96 0.63 0.46 0.29
Rock outcrop-----	15	Not rated		Not rated	
RokD: Rockaway, thin fragipan-----	45	Very limited Slope Slow permeability Stoniness Poor filter Droughty	1.00 1.00 1.00 0.99 0.75	Very limited Slope Slow permeability Poor filter Low pH Droughty	1.00 1.00 0.99 0.96 0.75
Chatfield-----	25	Very limited Slope Stoniness Poor filter Depth to bedrock Low pH	1.00 1.00 0.99 0.46 0.37	Very limited Slope Poor filter Low pH Depth to bedrock Droughty	1.00 0.99 0.96 0.46 0.29
Rock outcrop-----	20	Not rated		Not rated	
RooB: Rockaway, thin fragipan-----	50	Very limited Slow permeability Poor filter Droughty Low pH	1.00 0.99 0.75 0.37	Very limited Slow permeability Poor filter Low pH Droughty	1.00 0.99 0.96 0.75

Table 21.—Agricultural Disposal of Manure,  
Food-Processing Waste, and Sewage Sludge—Continued

Map symbol and soil name	Pct. of map unit	Application of manure and food- processing waste		Application of sewage sludge	
		Rating class and limiting features	Value	Rating class and limiting features	Value
RooB: (cont.) Urban land, Rockaway thin fragipan substratum-----	40	Not rated		Not rated	
RooC: Rockaway, thin fragipan-----	45	Very limited		Very limited	
		Slow permeability	1.00	Slow permeability	1.00
		Poor filter	0.99	Poor filter	0.99
		Droughty	0.75	Low pH	0.96
		Slope	0.63	Droughty	0.75
		Low pH	0.37	Slope	0.63
Urban land, Rockaway thin fragipan substratum-----	40	Not rated		Not rated	
RooD: Rockaway, thin fragipan-----	45	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Slow permeability	1.00	Slow permeability	1.00
		Poor filter	0.99	Poor filter	0.99
		Droughty	0.75	Low pH	0.96
		Low pH	0.37	Droughty	0.75
Urban land, Rockaway thin fragipan substratum-----	40	Not rated		Not rated	
ScoA: Scio-----	80	Very limited		Very limited	
		Saturated zone	1.00	Saturated zone	1.00
		Low pH	0.18	Low pH	0.67
SwfBc: Swartswood, extremely stony----	90	Very limited		Somewhat limited	
		Stoniness	1.00	Poor filter	0.99
		Poor filter	0.99	Low pH	0.96
		Slow permeability	0.50	Slow permeability	0.37
		Low pH	0.37	Droughty	0.03
		Droughty	0.03		
SwfCc: Swartswood, extremely stony----	90	Very limited		Somewhat limited	
		Stoniness	1.00	Poor filter	0.99
		Poor filter	0.99	Low pH	0.96
		Slope	0.63	Slope	0.63
		Slow permeability	0.50	Slow permeability	0.37
		Low pH	0.37	Droughty	0.03



Table 21.—Agricultural Disposal of Manure,  
Food-Processing Waste, and Sewage Sludge—Continued

Map symbol and soil name	Pct. of map unit	Application of manure and food- processing waste		Application of sewage sludge	
		Rating class and limiting features	Value	Rating class and limiting features	Value
SwfDc: Swartswood, extremely stony----	85	Very limited Slope Stoniness Poor filter Slow permeability Low pH	 1.00 1.00 0.99 0.50 0.37	Very limited Slope Poor filter Low pH Slow permeability Droughty	 1.00 0.99 0.96 0.37 0.03
UccAs: Udifluvents, occasionally flooded-----	90	Somewhat limited Poor filter Droughty Flooding Leaching Low pH	 0.99 0.98 0.60 0.45 0.32	Very limited Flooding Poor filter Droughty Low pH Saturated zone	 1.00 0.99 0.98 0.91 0.18
UdaB: Udorthents-----	100	Very limited Low adsorption Slow permeability Runoff Low pH	 1.00 1.00 0.40 0.22	Very limited Slow permeability Low pH Low adsorption	 1.00 0.77 0.14
UdauB: Udorthents-----	60	Very limited Low adsorption Slow permeability Runoff Low pH	 1.00 1.00 0.40 0.22	Very limited Slow permeability Low pH Low adsorption	 1.00 0.77 0.14
Urban land-----	40	Not rated		Not rated	
UnfA: Unadilla-----	80	Not limited		Not limited	
UnfB: Unadilla-----	80	Not limited		Not limited	
USCHRB: Urban land, Chatfield substratum-----	40	Not rated		Not rated	
Chatfield-----	25	Somewhat limited Poor filter Depth to bedrock Low pH Droughty	 0.99 0.46 0.37 0.29	Somewhat limited Poor filter Low pH Depth to bedrock Droughty	 0.99 0.96 0.46 0.29
Rock outcrop-----	20	Not rated		Not rated	
USCHRC: Urban land, Chatfield substratum-----	40	Not rated		Not rated	

Table 21.—Agricultural Disposal of Manure,  
Food-Processing Waste, and Sewage Sludge—Continued

Map symbol and soil name	Pct. of map unit	Application of manure and food- processing waste		Application of sewage sludge	
		Rating class and limiting features	Value	Rating class and limiting features	Value
USCHRC:					
Chatfield-----	25	Somewhat limited		Somewhat limited	
		Poor filter	0.99	Poor filter	0.99
		Slope	0.63	Low pH	0.96
		Depth to bedrock	0.46	Slope	0.63
		Low pH	0.37	Depth to bedrock	0.46
		Droughty	0.29	Droughty	0.29
Rock outcrop-----	20	Not rated		Not rated	
USCHRD:					
Urban land, Chatfield substratum-----	40	Not rated		Not rated	
Chatfield-----	25	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Poor filter	0.99	Poor filter	0.99
		Depth to bedrock	0.46	Low pH	0.96
		Low pH	0.37	Depth to bedrock	0.46
		Droughty	0.29	Droughty	0.29
Rock outcrop-----	20	Not rated		Not rated	
USFARC:					
Urban land, Farmington substratum-----	50	Not rated		Not rated	
Farmington-----	30	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Droughty	1.00	Droughty	1.00
		Poor filter	0.99	Poor filter	0.99
		Slope	0.63	Low pH	0.96
		Runoff	0.40	Slope	0.63
Rock outcrop-----	20	Not rated		Not rated	
USFARD:					
Urban land, Farmington substratum-----	40	Not rated		Not rated	
Farmington-----	35	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Slope	1.00
		Droughty	1.00	Droughty	1.00
		Poor filter	0.99	Poor filter	0.99
		Runoff	0.40	Low pH	0.96
Rock outcrop-----	25	Not rated		Not rated	
USFAWB:					
Urban land, Farmington substratum-----	50	Not rated		Not rated	

Table 21.—Agricultural Disposal of Manure,  
Food-Processing Waste, and Sewage Sludge—Continued

Map symbol and soil name	Pct. of map unit	Application of manure and food- processing waste		Application of sewage sludge	
		Rating class and limiting features	Value	Rating class and limiting features	Value
USFAWB: (cont.)					
Farmington-----	30	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Droughty	1.00	Droughty	1.00
		Poor filter	0.99	Poor filter	0.99
		Runoff	0.40	Low pH	0.96
		Low pH	0.37		
Wassaic-----	20	Somewhat limited		Somewhat limited	
		Poor filter	0.99	Poor filter	0.99
		Depth to bedrock	0.65	Low pH	0.96
		Droughty	0.48	Depth to bedrock	0.65
		Low pH	0.37	Droughty	0.48
USHAZA:					
Urban land, Hazen substratum-----	45	Not rated		Not rated	
Hazen-----	35	Somewhat limited		Somewhat limited	
		Poor filter	0.99	Poor filter	0.99
		Low pH	0.37	Low pH	0.96
		Droughty	0.25	Droughty	0.25
Hoosic-----	20	Very limited		Very limited	
		Poor filter	1.00	Poor filter	1.00
		Droughty	0.42	Low pH	0.96
		Low pH	0.37	Droughty	0.42
USHAZB:					
Urban land, Hazen substratum-----	55	Not rated		Not rated	
Hazen-----	25	Somewhat limited		Somewhat limited	
		Poor filter	0.99	Poor filter	0.99
		Low pH	0.37	Low pH	0.96
		Droughty	0.25	Droughty	0.25
Hoosic-----	20	Very limited		Very limited	
		Poor filter	1.00	Poor filter	1.00
		Droughty	0.42	Low pH	0.96
		Low pH	0.37	Droughty	0.42
USNAMB:					
Urban land, Nassau substratum-----	45	Not rated		Not rated	
Nassau-----	30	Very limited		Very limited	
		Depth to bedrock	1.00	Droughty	1.00
		Droughty	1.00	Depth to bedrock	1.00
		Cobble content	0.50	Cobble content	0.50
		Runoff	0.40		
Manlius-----	25	Very limited		Very limited	
		Droughty	1.00	Droughty	1.00
		Cobble content	0.75	Cobble content	0.75
		Depth to bedrock	0.54	Depth to bedrock	0.54

Table 21.—Agricultural Disposal of Manure,  
Food-Processing Waste, and Sewage Sludge—Continued

Map symbol and soil name	Pct. of map unit	Application of manure and food- processing waste		Application of sewage sludge	
		Rating class and limiting features	Value	Rating class and limiting features	Value
USNAMC:					
Urban land, Nassau substratum-----	55	Not rated		Not rated	
Nassau-----	25	Very limited		Very limited	
		Depth to bedrock	1.00	Droughty	1.00
		Droughty	1.00	Depth to bedrock	1.00
		Slope	0.63	Slope	0.63
		Cobble content	0.50	Cobble content	0.50
		Runoff	0.40		
Manlius-----	20	Very limited		Very limited	
		Droughty	1.00	Droughty	1.00
		Cobble content	0.75	Cobble content	0.75
		Slope	0.63	Slope	0.63
		Depth to bedrock	0.54	Depth to bedrock	0.54
USNAMD:					
Urban land, Nassau substratum-----	60	Not rated		Not rated	
Nassau-----	25	Very limited		Very limited	
		Slope	1.00	Droughty	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Droughty	1.00	Slope	1.00
		Cobble content	0.50	Cobble content	0.50
		Runoff	0.40		
Manlius-----	15	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Droughty	1.00	Droughty	1.00
		Cobble content	0.75	Cobble content	0.75
		Depth to bedrock	0.54	Depth to bedrock	0.54
USWUSB:					
Urban land, Wurtsboro substratum-----	45	Not rated		Not rated	
Wurtsboro-----	35	Very limited		Very limited	
		Slow permeability	1.00	Saturated zone	1.00
		Saturated zone	1.00	Slow permeability	1.00
		Poor filter	0.99	Poor filter	0.99
		Low pH	0.37	Low pH	0.96
Swartswood-----	20	Somewhat limited		Somewhat limited	
		Poor filter	0.99	Poor filter	0.99
		Slow permeability	0.50	Low pH	0.96
		Low pH	0.37	Slow permeability	0.37
		Droughty	0.03	Droughty	0.03
VepBc:					
Venango, extremely stony-----	90	Very limited		Very limited	
		Slow permeability	1.00	Saturated zone	1.00
		Saturated zone	1.00	Slow permeability	1.00
		Stoniness	1.00	Poor filter	0.99
		Fragipan	1.00	Low pH	0.96
		Poor filter	0.99		

Table 21.—Agricultural Disposal of Manure,  
Food-Processing Waste, and Sewage Sludge—Continued

Map symbol and soil name	Pct. of map unit	Application of manure and food- processing waste		Application of sewage sludge	
		Rating class and limiting features	Value	Rating class and limiting features	Value
VepCc: Venango, extremely stony-----	85	Very limited		Very limited	
		Slow permeability	1.00	Saturated zone	1.00
		Saturated zone	1.00	Slow permeability	1.00
		Stoniness	1.00	Poor filter	0.99
		Fragipan	1.00	Low pH	0.96
		Poor filter	0.99	Slope	0.63
WaahAt: Wallkill, frequently flooded-----	90	Very limited		Very limited	
		Ponding	1.00	Ponding	1.00
		Saturated zone	1.00	Saturated zone	1.00
		Flooding	1.00	Flooding	1.00
		Low pH	0.50	Low pH	0.99
		Runoff	0.40		
WabBb: Wallpack, aeolian mantle, very stony-	85	Somewhat limited		Somewhat limited	
		Poor filter	0.99	Poor filter	0.99
		Low pH	0.37	Low pH	0.96
		Stoniness	0.19	Low adsorption	0.01
		Low adsorption	0.06		
WabCb: Wallpack, aeolian mantle, very stony-	85	Somewhat limited		Somewhat limited	
		Poor filter	0.99	Poor filter	0.99
		Slope	0.63	Low pH	0.96
		Low pH	0.37	Slope	0.63
		Stoniness	0.19	Low adsorption	0.01
		Low adsorption	0.06		
WabDb: Wallpack, aeolian mantle, very stony-	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Poor filter	0.99	Poor filter	0.99
		Low pH	0.37	Low pH	0.96
		Stoniness	0.19	Low adsorption	0.01
		Low adsorption	0.06		
WacB: Wallpack-----	85	Very limited		Very limited	
		Fragipan	1.00	Slow permeability	1.00
		Slow permeability	1.00	Low pH	0.91
		Low pH	0.32		
WacBc: Wallpack, extremely stony-----	85	Very limited		Very limited	
		Stoniness	1.00	Slow permeability	1.00
		Slow permeability	1.00	Poor filter	0.99
		Fragipan	1.00	Low pH	0.96
		Poor filter	0.99		
		Low pH	0.37		

Table 21.—Agricultural Disposal of Manure,  
Food-Processing Waste, and Sewage Sludge—Continued

Map symbol and soil name	Pct. of map unit	Application of manure and food- processing waste		Application of sewage sludge	
		Rating class and limiting features	Value	Rating class and limiting features	Value
WacC:					
Wallpack-----	85	Very limited		Very limited	
		Fragipan	1.00	Slow permeability	1.00
		Slow permeability	1.00	Low pH	0.91
		Slope	0.63	Slope	0.63
		Low pH	0.32		
WacCc:					
Wallpack, extremely stony-----	85	Very limited		Very limited	
		Stoniness	1.00	Slow permeability	1.00
		Slow permeability	1.00	Poor filter	0.99
		Fragipan	1.00	Low pH	0.96
		Poor filter	0.99	Slope	0.63
		Slope	0.63		
WacD:					
Wallpack-----	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Fragipan	1.00	Slow permeability	1.00
		Slow permeability	1.00	Low pH	0.91
		Low pH	0.32		
WacDc:					
Wallpack, extremely stony-----	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Stoniness	1.00	Slow permeability	1.00
		Slow permeability	1.00	Poor filter	0.99
		Fragipan	1.00	Low pH	0.96
		Poor filter	0.99		
WATER:					
Water-----	100	Not rated		Not rated	
WecBc:					
Wellsboro, extremely stony-----	85	Very limited		Very limited	
		Slow permeability	1.00	Slow permeability	1.00
		Stoniness	1.00	Saturated zone	0.99
		Saturated zone	0.99	Low pH	0.91
		Low pH	0.32		
WecCc:					
Wellsboro, extremely stony-----	85	Very limited		Very limited	
		Slow permeability	1.00	Slow permeability	1.00
		Stoniness	1.00	Saturated zone	0.99
		Saturated zone	0.99	Low pH	0.91
		Slope	0.63	Slope	0.63
		Low pH	0.32		
WumBc:					
Wurtsboro, extremely stony-----	85	Very limited		Very limited	
		Slow permeability	1.00	Saturated zone	1.00
		Saturated zone	1.00	Slow permeability	1.00
		Stoniness	1.00	Poor filter	0.99
		Poor filter	0.99	Low pH	0.96
		Low pH	0.37		

Table 21.-Agricultural Disposal of Manure,  
Food-Processing Waste, and Sewage Sludge—Continued

Map symbol and soil name	Pct. of map unit	Application of manure and food- processing waste		Application of sewage sludge	
		Rating class and limiting features	Value	Rating class and limiting features	Value
WusBc: Wurtsboro, extremely stony-----	60	Very limited		Very limited	
		Slow permeability	1.00	Saturated zone	1.00
		Saturated zone	1.00	Slow permeability	1.00
		Stoniness	1.00	Poor filter	0.99
		Poor filter	0.99	Low pH	0.96
		Low pH	0.37		
Swartswood, extremely stony----	40	Very limited		Very limited	
		Stoniness	1.00	Poor filter	0.99
		Poor filter	0.99	Low pH	0.96
		Slow permeability	0.50	Slow permeability	0.37
		Low pH	0.37	Droughty	0.03
		Droughty	0.03		
WusCc: Wurtsboro, extremely stony-----	60	Very limited		Very limited	
		Slow permeability	1.00	Saturated zone	1.00
		Saturated zone	1.00	Slow permeability	1.00
		Stoniness	1.00	Poor filter	0.99
		Poor filter	0.99	Low pH	0.96
		Slope	0.63	Slope	0.63
Swartswood, extremely stony----	40	Very limited		Very limited	
		Stoniness	1.00	Poor filter	0.99
		Poor filter	0.99	Low pH	0.96
		Slope	0.63	Slope	0.63
		Slow permeability	0.50	Slow permeability	0.37
		Low pH	0.37	Droughty	0.03
WusDc: Wurtsboro, extremely stony-----	80	Very limited		Very limited	
		Slope	1.00	Saturated zone	1.00
		Slow permeability	1.00	Slope	1.00
		Saturated zone	1.00	Slow permeability	1.00
		Stoniness	1.00	Poor filter	0.99
		Poor filter	0.99	Low pH	0.96
		capacity			
Swartswood, extremely stony----	20	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Stoniness	1.00	Poor filter	0.99
		Poor filter	0.99	Low pH	0.96
		Slow permeability	0.50	Slow permeability	0.37
		Low pH	0.37	Droughty	0.03

Table 22.—Agricultural Disposal of Wastewater by  
Rapid Infiltration and Slow Rate Treatment

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater		Slow rate treatment of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
AhbBc: Alden, extremely stony-----	90	Very limited		Very limited	
		Ponding	1.00	Ponding	1.00
		Slow permeability	1.00	Saturated zone	1.00
		Saturated zone	1.00	Poor filter	0.99
				Low pH	0.96
				Slow permeability	0.26
AhcBc: Alden, gneiss till substratum, extremely stony----	90	Very limited		Very limited	
		Ponding	1.00	Ponding	1.00
		Slow permeability	1.00	Saturated zone	1.00
		Saturated zone	1.00	Poor filter	0.99
				Low pH	0.96
				Slow permeability	0.26
AruCh: Arnot, very rocky---	55	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope, surface application	1.00
		Slow permeability	1.00	Poor filter	0.99
		Low pH	0.03	Low pH	0.96
				Slope, sprinkler irrigation	0.22
Lordstown, very rocky-----	40	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Slow permeability	1.00	Slope, surface application	1.00
		Slope	1.00	Poor filter	0.99
		Low pH	0.03	Low pH	0.96
				Slope, sprinkler irrigation	0.22
ArvD: Arnot-----	45	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Slope, surface application	1.00
		Slow permeability	1.00	Slope, sprinkler irrigation	1.00
		Low pH	0.03	Poor filter	0.99
				Low pH	0.96



Table 22.—Agricultural Disposal of Wastewater by  
Rapid Infiltration and Slow Rate Treatment—Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater		Slow rate treatment of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
ArvD: (cont.)					
Lordstown-----	40	Very limited Slope	1.00	Very limited Slope, surface application	1.00
		Depth to bedrock	1.00	Slope, sprinkler irrigation	1.00
		Slow permeability	1.00	Depth to bedrock	1.00
		Low pH	0.03	Poor filter	0.99
				Low pH	0.96
Rock outcrop-----	15	Not rated		Not rated	
ArvE:					
Arnot-----	60	Very limited Slope	1.00	Very limited Depth to bedrock	1.00
		Depth to bedrock	1.00	Slope, surface application	1.00
		Slow permeability	1.00	Slope, sprinkler irrigation	1.00
		Low pH	0.03	Poor filter	0.99
				Low pH	0.96
Lordstown-----	25	Very limited Slope	1.00	Very limited Slope, surface application	1.00
		Depth to bedrock	1.00	Slope, sprinkler irrigation	1.00
		Slow permeability	1.00	Depth to bedrock	1.00
		Low pH	0.03	Poor filter	0.99
				Low pH	0.96
Rock outcrop-----	15	Not rated		Not rated	
AtcA:					
Atherton, very poorly drained-----	60	Very limited Ponding	1.00	Very limited Ponding	1.00
		Saturated zone	1.00	Saturated zone	1.00
		Slow permeability	1.00	Poor filter	0.99
				Low pH	0.96
Atherton, poorly drained-----	30	Very limited Saturated zone	1.00	Very limited Saturated zone	1.00
		Slow permeability	1.00	Low pH	0.07
				Low adsorption	0.01
CatbA:					
Catden-----	85	Very limited Ponding	1.00	Very limited Ponding	1.00
		Saturated zone	1.00	Saturated zone	1.00
		Slow permeability	1.00	Low pH	1.00

Table 22.—Agricultural Disposal of Wastewater by  
Rapid Infiltration and Slow Rate Treatment—Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater		Slow rate treatment of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
ChkC:					
Chatfield-----	45	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Slow permeability	1.00	Slope, surface application	1.00
		Slope	1.00	Poor filter	0.99
		Cobble content	0.02	Low pH	0.96
				Slope, sprinkler irrigation	0.22
Hollis-----	30	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Slow permeability	1.00	Slope, surface application	1.00
		Slope	1.00	Poor filter	0.99
				Low pH	0.96
				Slope, sprinkler irrigation	0.22
Rock outcrop-----	25	Not rated		Not rated	
ChkE:					
Chatfield-----	45	Very limited		Very limited	
		Slope	1.00	Slope, surface application	1.00
		Depth to bedrock	1.00	Slope, sprinkler irrigation	1.00
		Slow permeability	1.00	Depth to bedrock	1.00
		Cobble content	0.02	Poor filter	0.99
				Low pH	0.96
Hollis-----	30	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Slope, surface application	1.00
		Slow permeability	1.00	Slope, sprinkler irrigation	1.00
				Poor filter	0.99
				Low pH	0.96
Rock outcrop-----	20	Not rated		Not rated	
ChwBc:					
Chippewa, extremely stony-----	80	Very limited		Very limited	
		Ponding	1.00	Ponding	1.00
		Slow permeability	1.00	Saturated zone	1.00
		Saturated zone	1.00	Poor filter	0.99
				Slow permeability	0.96
				Low pH	0.96
CorA:					
Colonie-----	80	Somewhat limited		Somewhat limited	
		Slow permeability	0.32	Low pH	0.03

Table 22.—Agricultural Disposal of Wastewater by  
Rapid Infiltration and Slow Rate Treatment—Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater		Slow rate treatment of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
CorB: Colonie-----	80	Somewhat limited Slope	0.50	Somewhat limited Slope, surface application	0.68
		Slow permeability	0.32	Low pH	0.03
DefAr: Delaware, rarely flooded-----	80	Somewhat limited Slow permeability	0.32	Somewhat limited Poor filter Low pH	0.99 0.91
DefBr: Delaware, rarely flooded-----	80	Somewhat limited Slope	0.50	Somewhat limited Poor filter	0.99
		Slow permeability	0.32	Low pH	0.91
				Slope, surface application	0.68
FaxC: Farmington-----	50	Very limited Depth to bedrock	1.00	Very limited Depth to bedrock	1.00
		Slope	1.00	Slope, surface application	1.00
		Slow permeability	1.00	Poor filter	0.99
				Low pH	0.96
				Slope, sprinkler irrigation	0.22
Rock outcrop-----	40	Not rated		Not rated	
FdwB: Farmington-----	40	Very limited Depth to bedrock	1.00	Very limited Depth to bedrock	1.00
		Slow permeability	1.00	Poor filter	0.99
				Low pH	0.96
				Slope, surface application	0.08
Wassaic-----	30	Very limited Depth to bedrock	1.00	Very limited Depth to bedrock	1.00
		Slow permeability	1.00	Poor filter	0.99
				Low pH	0.96
				Slope, surface application	0.08
Rock outcrop-----	25	Not rated		Not rated	
FmhAs: Fluvaquents, occasionally flooded-----	90	Very limited Saturated zone	1.00	Very limited Saturated zone	1.00
		Slow permeability	1.00	Flooding	0.60
		Flooding	0.60	Low pH	0.42

Table 22.—Agricultural Disposal of Wastewater by  
Rapid Infiltration and Slow Rate Treatment—Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater		Slow rate treatment of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
FrdAb: Fredon, very stony--	45	Very limited Saturated zone Slow permeability	 1.00 1.00	Very limited Saturated zone Poor filter Low pH	 1.00 0.99 0.96
Halsey, very stony--	40	Very limited Ponding Saturated zone Slow permeability	 1.00 1.00 1.00	Very limited Ponding Saturated zone Poor filter Low pH	 1.00 1.00 0.99 0.96
GawEh: Galway, very rocky--	80	Very limited Slope  Depth to bedrock Slow permeability	 1.00  1.00 1.00	Very limited Slope, surface application Slope, sprinkler irrigation Depth to bedrock Poor filter Low pH	 1.00  1.00 1.00 0.99 0.96
HdxAb: Hazen, very stony---	50	Very limited Stone content Slow permeability	 1.00 0.32	Somewhat limited Poor filter Low pH	 0.99 0.96
Hoosic, very stony--	40	Somewhat limited Slow permeability Cobble content	 0.32 0.11	Very limited Poor filter Low pH	 1.00 0.96
HdxBb: Hazen, very stony---	60	Very limited Stone content Slope Slow permeability	 1.00 0.50 0.32	Somewhat limited Poor filter Low pH Slope, surface application	 0.99 0.96 0.68
Hoosic, very stony--	35	Somewhat limited Slope Slow permeability Cobble content	 0.50 0.32 0.11	Very limited Poor filter Low pH Slope, surface application	 1.00 0.96 0.68
HhmBc: Hibernia, extremely stony-----	80	Very limited Slow permeability Saturated zone Low pH	 1.00 1.00 0.03	Very limited Saturated zone Poor filter Low pH Slow permeability Slope, surface application	 1.00 0.99 0.96 0.96 0.08
HkrgBb: Hinckley, very stony	85	Somewhat limited Cobble content Slope	 0.98 0.50	Somewhat limited Poor filter Low pH Slope, surface application	 0.99 0.96 0.68

Table 22.—Agricultural Disposal of Wastewater by  
Rapid Infiltration and Slow Rate Treatment—Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater		Slow rate treatment of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
HkrgCb: Hinckley, very stony	85	Very limited Slope	1.00	Very limited Slope, surface application	1.00
		Cobble content	0.98	Slope, sprinkler irrigation	1.00
				Poor filter	0.99
				Low pH	0.96
HncD: Hollis-----	45	Very limited Slope	1.00	Very limited Depth to bedrock	1.00
		Depth to bedrock	1.00	Slope, surface application	1.00
		Slow permeability	1.00	Slope, sprinkler irrigation	1.00
				Poor filter	0.99
				Low pH	0.96
Rock outcrop-----	30	Not rated		Not rated	
Chatfield-----	20	Very limited Slope	1.00	Very limited Slope, surface application	1.00
		Depth to bedrock	1.00	Slope, sprinkler irrigation	1.00
		Slow permeability	1.00	Depth to bedrock	1.00
		Cobble content	0.02	Poor filter	0.99
				Low pH	0.96
HonCb: Hoosic, very stony--	60	Very limited Slope	1.00	Very limited Poor filter	1.00
		Slow permeability	0.32	Slope, surface application	1.00
		Cobble content	0.11	Slope, sprinkler irrigation	1.00
				Low pH	0.96
Hazen, very stony---	30	Very limited Slope	1.00	Very limited Slope, surface application	1.00
		Stone content	1.00	Slope, sprinkler irrigation	1.00
		Slow permeability	0.32	Poor filter	0.99
				Low pH	0.96
HopEb: Hoosic, very stony--	50	Very limited Slope	1.00	Very limited Poor filter	1.00
		Slow permeability	0.32	Slope, surface application	1.00
		Cobble content	0.11	Slope, sprinkler irrigation	1.00
				Low pH	0.96

Table 22.—Agricultural Disposal of Wastewater by  
Rapid Infiltration and Slow Rate Treatment—Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater		Slow rate treatment of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
HopEb: (cont.) Otisville, very stony-----	40	Very limited Slope	1.00	Very limited Slope, surface application	1.00
		Low pH	0.03	Slope, sprinkler irrigation	1.00
				Poor filter	0.99
				Low pH	0.96
LacBc: Lackawanna, extremely stony----	85	Very limited Slow permeability	1.00	Somewhat limited Poor filter	0.99
		Low pH	0.55	Low pH	0.96
		Stone content	0.35	Slow permeability	0.96
				Slope, surface application	0.08
LacCc: Lackawanna, extremely stony----	85	Very limited Slope	1.00	Very limited Slope, surface application	1.00
		Slow permeability	1.00	Slope, sprinkler irrigation	1.00
		Low pH	0.55	Poor filter	0.99
		Stone content	0.35	Low pH	0.96
				Slow permeability	0.96
LacDc: Lackawanna, extremely stony----	85	Very limited Slope	1.00	Very limited Slope, surface application	1.00
		Slow permeability	1.00	Slope, sprinkler irrigation	1.00
		Low pH	0.55	Poor filter	0.99
		Stone content	0.35	Low pH	0.96
				Slow permeability	0.96
LorB: Lordstown-----	50	Very limited Depth to bedrock	1.00	Very limited Depth to bedrock	1.00
		Slow permeability	1.00	Poor filter	0.99
		Low pH	0.03	Low pH	0.96
				Slope, surface application	0.08
Wallpack-----	35	Very limited Slow permeability	1.00	Somewhat limited Slow permeability	0.96
				Low pH	0.91
				Slope, surface application	0.08

Table 22.—Agricultural Disposal of Wastewater by  
Rapid Infiltration and Slow Rate Treatment—Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater		Slow rate treatment of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
LorC: Lordstown-----	50	Very limited Slope	1.00	Very limited Slope, surface application	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Slow permeability	1.00	Slope, sprinkler irrigation	1.00
		Low pH	0.03	Poor filter	0.99
				Low pH	0.96
Wallpack-----	35	Very limited Slope	1.00	Very limited Slope, surface application	1.00
		Slow permeability	1.00	Slope, sprinkler irrigation	1.00
				Slow permeability	0.96
				Low pH	0.91
LorCh: Lordstown, very rocky-----	50	Very limited Slope	1.00	Very limited Slope, surface application	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Slow permeability	1.00	Slope, sprinkler irrigation	1.00
		Low pH	0.03	Poor filter	0.99
				Low pH	0.96
Wallpack, very rocky	35	Very limited Slope	1.00	Very limited Slope, surface application	1.00
		Slow permeability	1.00	Slope, sprinkler irrigation	1.00
				Poor filter	0.99
				Low pH	0.96
				Slow permeability	0.96
LorD: Lordstown-----	50	Very limited Slope	1.00	Very limited Slope, surface application	1.00
		Depth to bedrock	1.00	Slope, sprinkler irrigation	1.00
		Slow permeability	1.00	Depth to bedrock	1.00
		Low pH	0.03	Poor filter	0.99
				Low pH	0.96
Wallpack-----	35	Very limited Slope	1.00	Very limited Slope, surface application	1.00
		Slow permeability	1.00	Slope, sprinkler irrigation	1.00
				Slow permeability	0.96
				Low pH	0.91

Table 22.—Agricultural Disposal of Wastewater by  
Rapid Infiltration and Slow Rate Treatment—Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater		Slow rate treatment of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
LorDh: Lordstown, very rocky-----	50	Very limited Slope	1.00	Very limited Slope, surface application	1.00
		Depth to bedrock	1.00	Slope, sprinkler irrigation	1.00
		Slow permeability	1.00	Depth to bedrock	1.00
		Low pH	0.03	Poor filter	0.99
Wallpack, very rocky	40	Very limited Slope	1.00	Very limited Slope, surface application	1.00
		Slow permeability	1.00	Slope, sprinkler irrigation	1.00
				Poor filter	0.99
				Low pH	0.96
MabEh: Manlius, very rocky--	60	Very limited Slope	1.00	Very limited Slope, surface application	1.00
		Depth to bedrock	1.00	Slope, sprinkler irrigation	1.00
		Cobble content	1.00	Depth to bedrock	1.00
		Slow permeability	0.32	Poor filter	0.99
Nassau, very rocky--	25	Very limited Slope	1.00	Very limited Depth to bedrock	1.00
		Depth to bedrock	1.00	Slope, surface application	1.00
		Cobble content	1.00	Slope, sprinkler irrigation	1.00
		Slow permeability	0.32	Poor filter	0.99
NauBh: Nassau, very rocky--	50	Very limited Depth to bedrock	1.00	Very limited Depth to bedrock	1.00
		Cobble content	0.95	Cobble content	0.50
		Slow permeability	0.32	Slope, surface application	0.08
Manlius, very rocky--	45	Very limited Depth to bedrock	1.00	Very limited Depth to bedrock	1.00
		Cobble content	1.00	Cobble content	0.75
		Slow permeability	0.32	Slope, surface application	0.08
NauCh: Nassau, very rocky--	55	Very limited Slope	1.00	Very limited Depth to bedrock	1.00
		Depth to bedrock	1.00	Slope, surface application	1.00
		Cobble content	0.95	Slope, sprinkler irrigation	1.00
		Slow permeability	0.32	Cobble content	0.50



Table 22.—Agricultural Disposal of Wastewater by  
Rapid Infiltration and Slow Rate Treatment—Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater		Slow rate treatment of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
NauCh: (cont.)					
Manlius, very rocky--	40	Very limited Slope	1.00	Very limited Slope, surface application	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Cobble content	1.00	Slope, sprinkler irrigation	1.00
		Slow permeability	0.32	Cobble content	0.75
NauDh:					
Nassau, very rocky--	50	Very limited Slope	1.00	Very limited Depth to bedrock	1.00
		Depth to bedrock	1.00	Slope, surface application	1.00
		Cobble content	0.95	Slope, sprinkler irrigation	1.00
		Slow permeability	0.32	Cobble content	0.50
Manlius, very rocky--	40	Very limited Slope	1.00	Very limited Slope, surface application	1.00
		Depth to bedrock	1.00	Slope, sprinkler irrigation	1.00
		Cobble content	1.00	Depth to bedrock	1.00
		Slow permeability	0.32	Cobble content	0.75
NavE:					
Nassau-----	50	Very limited Slope	1.00	Very limited Depth to bedrock	1.00
		Depth to bedrock	1.00	Slope, surface application	1.00
		Cobble content	1.00	Slope, sprinkler irrigation	1.00
		Slow permeability	0.32	Poor filter	0.99
				Low pH	0.96
Rock outcrop-----	45	Not rated		Not rated	
OpnCh:					
Oquaga, very rocky--	55	Very limited Slope	1.00	Very limited Slope, surface application	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Slow permeability	1.00	Slope, sprinkler irrigation	1.00
		Cobble content	0.65	Poor filter	0.99
		Low pH	0.14	Low pH	0.96
Lackawanna, very rocky-----	30	Very limited Slope	1.00	Very limited Slope, surface application	1.00
		Slow permeability	1.00	Slope, sprinkler irrigation	1.00
		Low pH	0.55	Poor filter	0.99
		Stone content	0.35	Low pH	0.96
				Slow permeability	0.96

Table 22.—Agricultural Disposal of Wastewater by  
Rapid Infiltration and Slow Rate Treatment—Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater		Slow rate treatment of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
OpnDh: Oquaga, very rocky--	50	Very limited Slope	1.00	Very limited Slope, surface application	1.00
		Depth to bedrock	1.00	Slope, sprinkler irrigation	1.00
		Slow permeability	1.00	Depth to bedrock	1.00
		Cobble content	0.65	Poor filter	0.99
		Low pH	0.14	Low pH	0.96
Lackawanna, very rocky-----	35	Very limited Slope	1.00	Very limited Slope, surface application	1.00
		Slow permeability	1.00	Slope, sprinkler irrigation	1.00
		Low pH	0.55	Poor filter	0.99
		Stone content	0.35	Low pH	0.96
				Slow permeability	0.96
OprC: Oquaga-----	75	Very limited Depth to bedrock	1.00	Very limited Depth to bedrock	1.00
		Slow permeability	1.00	Slope, surface application	1.00
		Slope	1.00	Poor filter	0.99
		Cobble content	0.65	Low pH	0.96
		Low pH	0.14	Slope, sprinkler irrigation	0.22
Rock outcrop-----	15	Not rated		Not rated	
OprE: Oquaga-----	60	Very limited Slope	1.00	Very limited Slope, surface application	1.00
		Depth to bedrock	1.00	Slope, sprinkler irrigation	1.00
		Slow permeability	1.00	Depth to bedrock	1.00
		Cobble content	0.65	Poor filter	0.99
		Low pH	0.14	Low pH	0.96
Rock outcrop-----	25	Not rated		Not rated	
PHG: Pits, sand and gravel-----	95	Not rated		Not rated	
PohA: Pompton-----	80	Very limited Saturated zone	1.00	Very limited Poor filter	1.00
		Slow permeability	1.00	Saturated zone	1.00
		Low pH	0.14	Low pH	0.99
QY: Pits, quarry-----	100	Not rated		Not rated	

Table 22.—Agricultural Disposal of Wastewater by  
Rapid Infiltration and Slow Rate Treatment—Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater		Slow rate treatment of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
RkrB:					
Riverhead-----	85	Very limited		Very limited	
		Saturated zone	1.00	Poor filter	1.00
		Slow permeability	0.32	Low pH	1.00
		Slope	0.12	Saturated zone	0.68
		Low pH	0.03	Slope, surface application	0.32
RnaF:					
Rock outcrop-----	40	Not rated		Not rated	
Arnot-----					
	30	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Slope, surface application	1.00
		Slow permeability	1.00	Slope, sprinkler irrigation	1.00
		Low pH	0.03	Poor filter	0.99
				Low pH	0.96
Rubble land-----					
	20	Very limited		Not rated	
		Slope	1.00		
		Cobble content	1.00		
		Stone content	1.00		
RnfC:					
Rock outcrop-----	40	Not rated		Not rated	
Farmington-----					
	35	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Slope, surface application	1.00
		Slow permeability	1.00	Slope, sprinkler irrigation	1.00
				Poor filter	0.99
				Low pH	0.96
Galway-----					
	25	Very limited		Very limited	
		Slope	1.00	Slope, surface application	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Slow permeability	1.00	Slope, sprinkler irrigation	1.00
				Poor filter	0.99
				Low pH	0.96
RnfD:					
Rock outcrop-----	50	Not rated		Not rated	
Farmington-----					
	40	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Slope, surface application	1.00
		Slow permeability	1.00	Slope, sprinkler irrigation	1.00
				Poor filter	0.99
				Low pH	0.96

Table 22.—Agricultural Disposal of Wastewater by  
Rapid Infiltration and Slow Rate Treatment—Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater		Slow rate treatment of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
RnfD: (cont.)					
Galway-----	10	Very limited Slope	1.00	Very limited Slope, surface application	1.00
		Depth to bedrock	1.00	Slope, sprinkler irrigation	1.00
		Slow permeability	1.00	Depth to bedrock	1.00
				Poor filter	0.99
				Low pH	0.96
RoefBc:					
Rockaway, thin fragipan, extremely stony-----	85	Very limited Slow permeability	1.00	Somewhat limited Poor filter	0.99
		Low pH	0.03	Low pH	0.96
				Slow permeability	0.96
				Slope, surface application	0.08
RoefCc:					
Rockaway, thin fragipan, extremely stony-----	85	Very limited Slope	1.00	Very limited Slope, surface application	1.00
		Slow permeability	1.00	Slope, sprinkler irrigation	1.00
		Low pH	0.03	Poor filter	0.99
				Low pH	0.96
				Slow permeability	0.96
RoefDc:					
Rockaway, thin fragipan, extremely stony-----	85	Very limited Slope	1.00	Very limited Slope, surface application	1.00
		Slow permeability	1.00	Slope, sprinkler irrigation	1.00
		Low pH	0.03	Poor filter	0.99
				Low pH	0.96
				Slow permeability	0.96
RokB:					
Rockaway, thin fragipan-----	50	Very limited Slow permeability	1.00	Somewhat limited Poor filter	0.99
		Low pH	0.03	Low pH	0.96
				Slow permeability	0.96
				Slope, surface application	0.08
Chatfield-----	30	Very limited Depth to bedrock	1.00	Very limited Depth to bedrock	1.00
		Slow permeability	1.00	Poor filter	0.99
		Cobble content	0.02	Low pH	0.96
				Slope, surface application	0.08
Rock outcrop-----	20	Not rated		Not rated	

Table 22.—Agricultural Disposal of Wastewater by  
Rapid Infiltration and Slow Rate Treatment—Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater		Slow rate treatment of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
RokC: Rockaway, thin fragipan-----	45	Very limited Slope	1.00	Very limited Slope, surface application	1.00
		Slow permeability	1.00	Slope, sprinkler irrigation	1.00
		Low pH	0.03	Poor filter	0.99
				Low pH	0.96
				Slow permeability	0.96
Chatfield-----	40	Very limited Slope	1.00	Very limited Slope, surface application	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Slow permeability	1.00	Slope, sprinkler irrigation	1.00
		Cobble content	0.02	Poor filter	0.99
				Low pH	0.96
Rock outcrop-----	15	Not rated		Not rated	
RokD: Rockaway, thin fragipan-----	45	Very limited Slope	1.00	Very limited Slope, surface application	1.00
		Slow permeability	1.00	Slope, sprinkler irrigation	1.00
		Low pH	0.03	Poor filter	0.99
				Low pH	0.96
				Slow permeability	0.96
Chatfield-----	25	Very limited Slope	1.00	Very limited Slope, surface application	1.00
		Depth to bedrock	1.00	Slope, sprinkler irrigation	1.00
		Slow permeability	1.00	Depth to bedrock	1.00
		Cobble content	0.02	Poor filter	0.99
				Low pH	0.96
Rock outcrop-----	20	Not rated		Not rated	
RooB: Rockaway, thin fragipan-----	50	Very limited Slow permeability	1.00	Somewhat limited Poor filter	0.99
		Low pH	0.03	Low pH	0.96
				Slow permeability	0.96
				Slope, surface application	0.08
Urban land, Rockaway thin fragipan substratum-----	40	Not rated		Not rated	

Table 22.—Agricultural Disposal of Wastewater by  
Rapid Infiltration and Slow Rate Treatment—Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater		Slow rate treatment of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
RooC: Rockaway, thin fragipan-----	45	Very limited Slope	1.00	Very limited Slope, surface application	1.00
		Slow permeability	1.00	Slope, sprinkler irrigation	1.00
		Low pH	0.03	Poor filter	0.99
				Low pH	0.96
				Slow permeability	0.96
Urban land, Rockaway thin fragipan substratum-----	40	Not rated		Not rated	
RooD: Rockaway, thin fragipan-----	45	Very limited Slope	1.00	Very limited Slope, surface application	1.00
		Slow permeability	1.00	Slope, sprinkler irrigation	1.00
		Low pH	0.03	Poor filter	0.99
				Low pH	0.96
				Slow permeability	0.96
Urban land, Rockaway thin fragipan substratum-----	40	Not rated		Not rated	
ScoA: Scio-----	80	Very limited Saturated zone	1.00	Very limited Saturated zone	1.00
		Slow permeability	1.00	Low pH	0.67
SwfBc: Swartswood, extremely stony----	90	Very limited Slow permeability	1.00	Somewhat limited Poor filter	0.99
		Low pH	0.03	Low pH	0.96
				Slow permeability	0.26
				Slope, surface application	0.08
SwfCc: Swartswood, extremely stony----	90	Very limited Slope	1.00	Very limited Slope, surface application	1.00
		Slow permeability	1.00	Slope, sprinkler irrigation	1.00
		Low pH	0.03	Poor filter	0.99
				Low pH	0.96
				Slow permeability	0.26

Table 22.—Agricultural Disposal of Wastewater by  
Rapid Infiltration and Slow Rate Treatment—Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater		Slow rate treatment of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
SwfDc: Swartswood, extremely stony----	85	Very limited Slope	1.00	Very limited Slope, surface application	1.00
		Slow permeability	1.00	Slope, sprinkler irrigation	1.00
		Low pH	0.03	Poor filter	0.99
				Low pH	0.96
				Slow permeability	0.26
UccAs: Udifluvents, occasionally flooded-----	90	Very limited Saturated zone	1.00	Somewhat limited Poor filter	0.99
		Flooding	0.60	Low pH	0.91
		Slow permeability	0.32	Flooding	0.60
				Saturated zone	0.18
UdaB: Udorthents-----	100	Very limited Slow permeability	1.00	Very limited Low adsorption	1.00
				Slow permeability	0.96
				Low pH	0.77
				Slope, surface application	0.08
UdaB: Udorthents-----	60	Very limited Slow permeability	1.00	Very limited Low adsorption	1.00
				Slow permeability	0.96
				Low pH	0.77
				Slope, surface application	0.08
Urban land-----	40	Not rated		Not rated	
UnfA: Unadilla-----	80	Very limited Slow permeability	1.00	Not limited	
UnfB: Unadilla-----	80	Very limited Slow permeability	1.00	Somewhat limited Slope, surface application	0.68
		Slope	0.50		
USCHRB: Urban land, Chatfield substratum-----	40	Not rated		Not rated	
Chatfield-----	25	Very limited Depth to bedrock	1.00	Very limited Depth to bedrock	1.00
		Slow permeability	1.00	Poor filter	0.99
		Cobble content	0.02	Low pH	0.96
				Slope, surface application	0.08

Table 22.—Agricultural Disposal of Wastewater by  
Rapid Infiltration and Slow Rate Treatment—Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater		Slow rate treatment of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
USCHRB: (cont.)					
Rock outcrop-----	20	Not rated		Not rated	
USCHRC:					
Urban land, Chatfield substratum-----	40	Not rated		Not rated	
Chatfield-----	25	Very limited Slope	1.00	Very limited Slope, surface application	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Slow permeability	1.00	Slope, sprinkler irrigation	1.00
		Cobble content	0.02	Poor filter	0.99
				Low pH	0.96
Rock outcrop-----	20	Not rated		Not rated	
USCHRD:					
Urban land, Chatfield substratum-----	40	Not rated		Not rated	
Chatfield-----	25	Very limited Slope	1.00	Very limited Slope, surface application	1.00
		Depth to bedrock	1.00	Slope, sprinkler irrigation	1.00
		Slow permeability	1.00	Depth to bedrock	1.00
		Cobble content	0.02	Poor filter	0.99
				Low pH	0.96
Rock outcrop-----	20	Not rated		Not rated	
USFARC:					
Urban land, Farmington substratum-----	50	Not rated		Not rated	
Farmington-----	30	Very limited Slope	1.00	Very limited Depth to bedrock	1.00
		Depth to bedrock	1.00	Slope, surface application	1.00
		Slow permeability	1.00	Slope, sprinkler irrigation	1.00
				Poor filter	0.99
				Low pH	0.96
Rock outcrop-----	20	Not rated		Not rated	
USFARD:					
Urban land, Farmington substratum-----	40	Not rated		Not rated	



Table 22.—Agricultural Disposal of Wastewater by  
Rapid Infiltration and Slow Rate Treatment—Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater		Slow rate treatment of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
USFARD: (cont.)					
Farmington-----	35	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Slope, surface application	1.00
		Slow permeability	1.00	Slope, sprinkler irrigation	1.00
				Poor filter	0.99
				Low pH	0.96
Rock outcrop-----	25	Not rated		Not rated	
USFAWB:					
Urban land, Farmington substratum-----	50	Not rated		Not rated	
Farmington-----	30	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Slow permeability	1.00	Poor filter	0.99
				Low pH	0.96
				Slope, surface application	0.08
Wassaic-----	20	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Slow permeability	1.00	Poor filter	0.99
				Low pH	0.96
				Slope, surface application	0.08
USHAZA:					
Urban land, Hazen substratum-----	45	Not rated		Not rated	
Hazen-----	35	Very limited		Somewhat limited	
		Stone content	1.00	Poor filter	0.99
		Slow permeability	0.32	Low pH	0.96
Hoosic-----	20	Somewhat limited		Very limited	
		Slow permeability	0.32	Poor filter	1.00
		Cobble content	0.11	Low pH	0.96
USHAZB:					
Urban land, Hazen substratum-----	55	Not rated		Not rated	
Hazen-----	25	Very limited		Somewhat limited	
		Stone content	1.00	Poor filter	0.99
		Slope	0.50	Low pH	0.96
		Slow permeability	0.32	Slope, surface application	0.68
Hoosic-----	20	Somewhat limited		Very limited	
		Slope	0.50	Poor filter	1.00
		Slow permeability	0.32	Low pH	0.96
		Cobble content	0.11	Slope, surface application	0.68

Table 22.—Agricultural Disposal of Wastewater by  
Rapid Infiltration and Slow Rate Treatment—Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater		Slow rate treatment of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
USNAMB:					
Urban land, Nassau substratum-----	45	Not rated		Not rated	
Nassau-----	30	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Cobble content	0.95	Cobble content	0.50
		Slow permeability	0.32	Slope, surface application	0.08
Manlius-----	25	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Cobble content	1.00	Cobble content	0.75
		Slow permeability	0.32	Slope, surface application	0.08
USNAMC:					
Urban land, Nassau substratum-----	55	Not rated		Not rated	
Nassau-----	25	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Slope, surface application	1.00
		Cobble content	0.95	Slope, sprinkler irrigation	1.00
		Slow permeability	0.32	Cobble content	0.50
Manlius-----	20	Very limited		Very limited	
		Slope	1.00	Slope, surface application	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Cobble content	1.00	Slope, sprinkler irrigation	1.00
		Slow permeability	0.32	Cobble content	0.75
USNAMD:					
Urban land, Nassau substratum-----	60	Not rated		Not rated	
Nassau-----	25	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Slope, surface application	1.00
		Cobble content	0.95	Slope, sprinkler irrigation	1.00
		Slow permeability	0.32	Cobble content	0.50
Manlius-----	15	Very limited		Very limited	
		Slope	1.00	Slope, surface application	1.00
		Depth to bedrock	1.00	Slope, sprinkler irrigation	1.00
		Cobble content	1.00	Depth to bedrock	1.00
		Slow permeability	0.32	Cobble content	0.75

Table 22.—Agricultural Disposal of Wastewater by  
Rapid Infiltration and Slow Rate Treatment—Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater		Slow rate treatment of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
USWUSB: Urban land, Wurtsboro substratum-----	45	Not rated		Not rated	
Wurtsboro-----	35	Very limited		Very limited	
		Slow permeability	1.00	Saturated zone	1.00
		Saturated zone	1.00	Poor filter	0.99
		Low pH	0.03	Low pH	0.96
				Slow permeability	0.96
				Slope, surface application	0.08
Swartswood-----	20	Very limited		Somewhat limited	
		Slow permeability	1.00	Poor filter	0.99
		Low pH	0.03	Low pH	0.96
				Slow permeability	0.26
				Slope, surface application	0.08
VepBc: Venango, extremely stony-----	90	Very limited		Very limited	
		Slow permeability	1.00	Saturated zone	1.00
		Saturated zone	1.00	Poor filter	0.99
				Low pH	0.96
				Slow permeability	0.96
				Slope, surface application	0.08
VepCc: Venango, extremely stony-----	85	Very limited		Very limited	
		Slope	1.00	Saturated zone	1.00
		Slow permeability	1.00	Slope, surface application	1.00
		Saturated zone	1.00	Slope, sprinkler irrigation	1.00
				Poor filter	0.99
				Low pH	0.96
WaahAt: Wallkill, frequently flooded-----	90	Very limited		Very limited	
		Ponding	1.00	Ponding	1.00
		Flooding	1.00	Saturated zone	1.00
		Saturated zone	1.00	Flooding	1.00
		Slow permeability	1.00	Low pH	0.99
		Low pH	0.03		
WabBb: Wallpack, aeolian mantle, very stony-	85	Very limited		Somewhat limited	
		Slow permeability	1.00	Poor filter	0.99
		Low pH	0.03	Low pH	0.96
				Slope, surface application	0.08
				Low adsorption	0.06

Table 22.—Agricultural Disposal of Wastewater by  
Rapid Infiltration and Slow Rate Treatment—Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater		Slow rate treatment of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
WabCb: Wallpack, aeolian mantle, very stony-	85	Very limited Slope	1.00	Very limited Slope, surface application	1.00
		Slow permeability	1.00	Slope, sprinkler irrigation	1.00
		Low pH	0.03	Poor filter	0.99
				Low pH	0.96
				Low adsorption	0.06
WabDb: Wallpack, aeolian mantle, very stony-	85	Very limited Slope	1.00	Very limited Slope, surface application	1.00
		Slow permeability	1.00	Slope, sprinkler irrigation	1.00
		Low pH	0.03	Poor filter	0.99
				Low pH	0.96
				Low adsorption	0.06
WacB: Wallpack-----	85	Very limited Slow permeability	1.00	Somewhat limited Slow permeability	0.96
				Low pH	0.91
				Slope, surface application	0.08
WacBc: Wallpack, extremely stony-----	85	Very limited Slow permeability	1.00	Somewhat limited Poor filter	0.99
				Low pH	0.96
				Slow permeability	0.96
				Slope, surface application	0.08
WacC: Wallpack-----	85	Very limited Slope	1.00	Very limited Slope, surface application	1.00
		Slow permeability	1.00	Slope, sprinkler irrigation	1.00
				Slow permeability	0.96
				Low pH	0.91
WacCc: Wallpack, extremely stony-----	85	Very limited Slope	1.00	Very limited Slope, surface application	1.00
		Slow permeability	1.00	Slope, sprinkler irrigation	1.00
				Poor filter	0.99
				Low pH	0.96
				Slow permeability	0.96

Table 22.—Agricultural Disposal of Wastewater by  
Rapid Infiltration and Slow Rate Treatment—Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater		Slow rate treatment of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
WacD:					
Wallpack-----	85	Very limited Slope	1.00	Very limited Slope, surface application	1.00
		Slow permeability	1.00	Slope, sprinkler irrigation	1.00
				Slow permeability	0.96
				Low pH	0.91
WacDc:					
Wallpack, extremely stony-----	85	Very limited Slope	1.00	Very limited Slope, surface application	1.00
		Slow permeability	1.00	Slope, sprinkler irrigation	1.00
				Poor filter	0.99
				Low pH	0.96
				Slow permeability	0.96
WATER:					
Water-----	100	Not rated		Not rated	
WecBc:					
Wellsboro, extremely stony-----	85	Very limited		Somewhat limited	
		Slow permeability	1.00	Saturated zone	0.99
		Saturated zone	0.99	Slow permeability	0.96
		Cobble content	0.10	Low pH	0.91
				Slope, surface application	0.08
WecCc:					
Wellsboro, extremely stony-----	85	Very limited Slope	1.00	Very limited Slope, surface application	1.00
		Slow permeability	1.00	Slope, sprinkler irrigation	1.00
		Saturated zone	0.99	Saturated zone	0.99
		Cobble content	0.10	Slow permeability	0.96
				Low pH	0.91
WumBc:					
Wurtsboro, extremely stony-----	85	Very limited		Very limited	
		Slow permeability	1.00	Saturated zone	1.00
		Saturated zone	1.00	Poor filter	0.99
		Low pH	0.03	Low pH	0.96
				Slow permeability	0.96
				Slope, surface application	0.08

Table 22.—Agricultural Disposal of Wastewater by  
Rapid Infiltration and Slow Rate Treatment—Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater		Slow rate treatment of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
WusBc: Wurtsboro, extremely stony-----	60	Very limited		Very limited	
		Slow permeability	1.00	Saturated zone	1.00
		Saturated zone	1.00	Poor filter	0.99
		Low pH	0.03	Low pH	0.96
				Slow permeability	0.96
				Slope, surface application	0.08
Swartswood, extremely stony----	40	Very limited		Somewhat limited	
		Slow permeability	1.00	Poor filter	0.99
		Low pH	0.03	Low pH	0.96
				Slow permeability	0.26
				Slope, surface application	0.08
WusCc: Wurtsboro, extremely stony-----	60	Very limited		Very limited	
		Slope	1.00	Saturated zone	1.00
		Slow permeability	1.00	Slope, surface surface	1.00
		movement		Slope, sprinkler irrigation	1.00
		Saturated zone	1.00	Poor filter	0.99
		Low pH	0.03	Low pH	0.96
Swartswood, extremely stony----	40	Very limited		Very limited	
		Slope	1.00	Slope, surface application	1.00
		Slow permeability	1.00	Slope, sprinkler irrigation	1.00
		Low pH	0.03	Poor filter	0.99
				Low pH	0.96
				Slow permeability	0.26
WusDc: Wurtsboro, extremely stony-----	80	Very limited		Very limited	
		Slope	1.00	Saturated zone	1.00
		Slow permeability	1.00	Slope, surface application	1.00
		Saturated zone	1.00	Slope, sprinkler irrigation	1.00
		Low pH	0.03	Poor filter	0.99
				Low pH	0.96
Swartswood, extremely stony----	20	Very limited		Very limited	
		Slope	1.00	Slope, surface application	1.00
		Slow permeability	1.00	Slope, sprinkler irrigation	1.00
		Low pH	0.03	Poor filter	0.99
				Low pH	0.96
				Slow permeability	0.26

Table 23.—Agricultural Disposal of Wastewater by Irrigation and Overland Flow

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation		Overland flow of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
AhbBc: Alden, extremely stony-----	90	Very limited		Very limited	
		Ponding	1.00	Seepage	1.00
		Saturated zone	1.00	Ponding	1.00
		Poor filter	0.99	Saturated zone	1.00
		Low pH	0.96	Low pH	0.96
		Slow permeability	0.37		
AhcBc: Alden, gneiss till substratum, extremely stony----	90	Very limited		Very limited	
		Ponding	1.00	Seepage	1.00
		Saturated zone	1.00	Ponding	1.00
		Poor filter	0.99	Saturated zone	1.00
		Low pH	0.96	Low pH	0.96
		Slow permeability	0.37		
AruCh: Arnot, very rocky---	55	Very limited		Very limited	
		Droughty	1.00	Seepage	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope, surface application	1.00	Low pH	0.96
		Poor filter	0.99	Slope, surface application	0.22
		Low pH	0.96		
Lordstown, very rocky-----	40	Very limited		Very limited	
		Slope, surface application	1.00	Seepage	1.00
		Poor filter	0.99	Depth to bedrock	1.00
		Low pH	0.96	Low pH	0.96
		Droughty	0.41	Slope, surface application	0.22
		Slope, sprinkler application	0.10		
ArvD: Arnot-----	45	Very limited		Very limited	
		Droughty	1.00	Seepage	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope, surface application	1.00	Slope, surface application	1.00
		Slope, sprinkler application	1.00	Low pH	0.96
		Poor filter	0.99		

Table 23.—Agricultural Disposal of Wastewater by  
Irrigation and Overland Flow—Continued

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation		Overland flow of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
ArvD: (cont.)					
Lordstown-----	40	Very limited		Very limited	
		Slope, surface application	1.00	Seepage	1.00
		Slope, sprinkler application	1.00	Slope, surface application	1.00
		Poor filter	0.99	Depth to bedrock	1.00
		Low pH	0.96	Low pH	0.96
		Droughty	0.41		
Rock outcrop-----	15	Not rated		Not rated	
ArvE:					
Arnot-----	60	Very limited		Very limited	
		Droughty	1.00	Seepage	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope, surface application	1.00	Slope, surface application	1.00
		Slope, sprinkler application	1.00	Low pH	0.96
		Poor filter	0.99		
Lordstown-----	25	Very limited		Very limited	
		Slope, surface application	1.00	Seepage	1.00
		Slope, sprinkler application	1.00	Slope, surface application	1.00
		Poor filter	0.99	Depth to bedrock	1.00
		Low pH	0.96	Low pH	0.96
		Droughty	0.41		
Rock outcrop-----	15	Not rated		Not rated	
AtcA:					
Atherton, very poorly drained----	60	Very limited		Very limited	
		Ponding	1.00	Seepage	1.00
		Saturated zone	1.00	Ponding	1.00
		Poor filter	0.99	Saturated zone	1.00
		Low pH	0.96	Low pH	0.96
Atherton, poorly drained-----	30	Very limited		Very limited	
		Saturated zone	1.00	Saturated zone	1.00
		Low pH	0.07	Seepage	1.00
		Low adsorption	0.01	Low pH	0.07
				Low adsorption	0.01
CatbA:					
Catden-----	85	Very limited		Very limited	
		Ponding	1.00	Seepage	1.00
		Saturated zone	1.00	Ponding	1.00
		Low pH	1.00	Saturated zone	1.00
				Low pH	1.00



Table 23.—Agricultural Disposal of Wastewater by  
Irrigation and Overland Flow—Continued

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation		Overland flow of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
ChkC:					
Chatfield-----	45	Very limited		Very limited	
		Slope, surface application	1.00	Seepage	1.00
		Poor filter	0.99	Depth to bedrock	1.00
		Low pH	0.96	Low pH	0.96
		Depth to bedrock	0.46	Slope, surface application	0.22
		Droughty	0.29	Cobble content	0.02
Hollis-----	30	Very limited		Very limited	
		Depth to bedrock	1.00	Seepage	1.00
		Droughty	1.00	Depth to bedrock	1.00
		Slope, surface application	1.00	Low pH	0.96
		Poor filter	0.99	Slope, surface application	0.22
		Low pH	0.96		
Rock outcrop-----	25	Not rated		Not rated	
ChkE:					
Chatfield-----	45	Very limited		Very limited	
		Slope, surface application	1.00	Seepage	1.00
		Slope, sprinkler application	1.00	Slope, surface application	1.00
		Poor filter	0.99	Depth to bedrock	1.00
		Low pH	0.96	Low pH	0.96
		Depth to bedrock	0.46	Cobble content	0.02
Hollis-----	30	Very limited		Very limited	
		Depth to bedrock	1.00	Seepage	1.00
		Slope, surface application	1.00	Depth to bedrock	1.00
		Slope, sprinkler application	1.00	Slope, surface application	1.00
		Droughty	1.00	Low pH	0.96
		Poor filter	0.99		
Rock outcrop-----	20	Not rated		Not rated	
ChwBc:					
Chippewa, extremely stony-----	80	Very limited		Very limited	
		Ponding	1.00	Seepage	1.00
		Saturated zone	1.00	Ponding	1.00
		Slow permeability	1.00	Saturated zone	1.00
		Poor filter	0.99	Low pH	0.96
		Low pH	0.96		
CorA:					
Colonie-----	80	Somewhat limited		Very limited	
		Droughty	0.41	Seepage	1.00
		Low pH	0.03	Low pH	0.03

Table 23.—Agricultural Disposal of Wastewater by  
Irrigation and Overland Flow—Continued

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation		Overland flow of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
CorB: Colonie-----	80	Somewhat limited		Very limited	
		Slope, surface application	0.68	Seepage	1.00
		Droughty	0.41	Low pH	0.03
		Low pH	0.03		
DefAr: Delaware, rarely flooded-----	80	Somewhat limited		Very limited	
		Poor filter	0.99	Seepage	1.00
		Low pH	0.91	Low pH	0.91
				Flooding	0.40
DefBr: Delaware, rarely flooded-----	80	Somewhat limited		Very limited	
		Poor filter	0.99	Seepage	1.00
		Low pH	0.91	Low pH	0.91
		Slope, surface application	0.68	Flooding	0.40
FaxC: Farmington-----	50	Very limited		Very limited	
		Depth to bedrock	1.00	Seepage	1.00
		Droughty	1.00	Depth to bedrock	1.00
		Slope, surface application	1.00	Low pH	0.96
		Poor filter	0.99	Slope, surface application	0.22
		Low pH	0.96		
Rock outcrop-----	40	Not rated		Not rated	
FdwB: Farmington-----	40	Very limited		Very limited	
		Depth to bedrock	1.00	Seepage	1.00
		Droughty	1.00	Depth to bedrock	1.00
		Poor filter	0.99	Low pH	0.96
		Low pH	0.96		
		Slope, surface application	0.08		
Wassaic-----	30	Somewhat limited		Very limited	
		Poor filter	0.99	Seepage	1.00
		Low pH	0.96	Depth to bedrock	1.00
		Depth to bedrock	0.65	Low pH	0.96
		Droughty	0.48		
		Slope, surface application	0.08		
Rock outcrop-----	25	Not rated		Not rated	
FmhAs: Fluvaquents, occasionally flooded-----	90	Very limited		Very limited	
		Saturated zone	1.00	Flooding	1.00
		Flooding	0.60	Seepage	1.00
		Low pH	0.42	Saturated zone	1.00
				Low pH	0.42

Table 23.—Agricultural Disposal of Wastewater by  
Irrigation and Overland Flow—Continued

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation		Overland flow of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
<b>FrdAb:</b>					
Fredon, very stony--	45	Very limited		Very limited	
		Saturated zone	1.00	Seepage	1.00
		Poor filter	0.99	Saturated zone	1.00
		Low pH	0.96	Low pH	0.96
		Droughty	0.03		
<b>Halsey, very stony--</b>	<b>40</b>	<b>Very limited</b>		<b>Very limited</b>	
		Ponding	1.00	Seepage	1.00
		Saturated zone	1.00	Ponding	1.00
		Poor filter	0.99	Saturated zone	1.00
		Low pH	0.96	Low pH	0.96
		Droughty	0.01		
<b>GawEh:</b>					
Galway, very rocky--	80	Very limited		Very limited	
		Slope, surface application	1.00	Seepage	1.00
		Slope, sprinkler application	1.00	Slope, surface application	1.00
		Poor filter	0.99	Depth to bedrock	1.00
		Low pH	0.96	Low pH	0.96
		Depth to bedrock	0.90		
<b>HdxAb:</b>					
Hazen, very stony---	50	Somewhat limited		Very limited	
		Poor filter	0.99	Seepage	1.00
		Low pH	0.96	Stone content	1.00
		Droughty	0.25	Low pH	0.96
<b>Hoosic, very stony--</b>	<b>40</b>	<b>Very limited</b>		<b>Very limited</b>	
		Poor filter	1.00	Seepage	1.00
		Low pH	0.96	Low pH	0.96
		Droughty	0.42	Cobble content	0.03
<b>HdxBb:</b>					
Hazen, very stony---	60	Somewhat limited		Very limited	
		Poor filter	0.99	Seepage	1.00
		Low pH	0.96	Stone content	1.00
		Slope, surface application	0.68	Low pH	0.96
		Droughty	0.25		
<b>Hoosic, very stony--</b>	<b>35</b>	<b>Very limited</b>		<b>Very limited</b>	
		Poor filter	1.00	Seepage	1.00
		Low pH	0.96	Low pH	0.96
		Slope, surface application	0.68	Cobble content	0.03
		Droughty	0.42		
<b>HhmBc:</b>					
Hibernia, extremely stony-----	80	Very limited		Very limited	
		Saturated zone	1.00	Seepage	1.00
		Slow permeability	1.00	Saturated zone	1.00
		Poor filter	0.99	Low pH	0.96
		Low pH	0.96		
		Slope, surface application	0.08		

Table 23.—Agricultural Disposal of Wastewater by  
Irrigation and Overland Flow—Continued

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation		Overland flow of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
HkrgBb: Hinckley, very stony	85	Very limited		Very limited	
		Droughty	1.00	Seepage	1.00
		Poor filter	0.99	Cobble content	0.99
		Low pH	0.96	Low pH	0.96
		Slope, surface application	0.68		
HkrgCb: Hinckley, very stony	85	Very limited		Very limited	
		Slope, surface application	1.00	Seepage	1.00
		Droughty	1.00	Slope, surface application	1.00
		Poor filter	0.99	Cobble content	0.99
		Low pH	0.96	Low pH	0.96
		Slope, sprinkler application	0.78		
HncD: Hollis-----	45	Very limited		Very limited	
		Depth to bedrock	1.00	Seepage	1.00
		Slope, surface application	1.00	Depth to bedrock	1.00
		Slope, sprinkler application	1.00	Slope, surface application	1.00
		Droughty	1.00	Low pH	0.96
		Poor filter	0.99		
Rock outcrop-----	30	Not rated		Not rated	
Chatfield-----	20	Very limited		Very limited	
		Slope, surface application	1.00	Seepage	1.00
		Slope, sprinkler application	1.00	Slope, surface application	1.00
		Poor filter	0.99	Depth to bedrock	1.00
		Low pH	0.96	Low pH	0.96
		Depth to bedrock	0.46	Cobble content	0.02
HonCb: Hoosic, very stony--	60	Very limited		Very limited	
		Poor filter	1.00	Seepage	1.00
		Slope, surface application	1.00	Slope, surface application	1.00
		Low pH	0.96	Low pH	0.96
		Slope, sprinkler application	0.78	Cobble content	0.03
		Droughty	0.42		
Hazen, very stony---	30	Very limited		Very limited	
		Slope, surface application	1.00	Seepage	1.00
		Poor filter	0.99	Slope, surface application	1.00
		Low pH	0.96	Stone content	1.00
		Slope, sprinkler application	0.78	Low pH	0.96
		Droughty	0.25		

Table 23.—Agricultural Disposal of Wastewater by  
Irrigation and Overland Flow—Continued

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation		Overland flow of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
HopEb: Hoosic, very stony--	50	Very limited		Very limited	
		Poor filter	1.00	Seepage	1.00
		Slope, surface application	1.00	Slope, surface application	1.00
		Slope, sprinkler application	1.00	Low pH	0.96
		Low pH	0.96	Cobble content	0.03
		Droughty	0.42		
Otisville, very stony-----	40	Very limited		Very limited	
		Droughty	1.00	Seepage	1.00
		Slope, surface application	1.00	Slope, surface application	1.00
		Slope, sprinkler application	1.00	Low pH	0.96
		Poor filter	0.99		
		Low pH	0.96		
LacBc: Lackawanna, extremely stony----	85	Very limited		Very limited	
		Slow permeability	1.00	Seepage	1.00
		Poor filter	0.99	Low pH	0.96
		Low pH	0.96	Stone content	0.22
		Slope, surface application	0.08		
LacCc: Lackawanna, extremely stony----	85	Very limited		Very limited	
		Slope, surface application	1.00	Seepage	1.00
		Slow permeability	1.00	Slope, surface application	1.00
		Poor filter	0.99	Low pH	0.96
		Low pH	0.96	Stone content	0.22
		Slope, sprinkler application	0.78		
LacDc: Lackawanna, extremely stony----	85	Very limited		Very limited	
		Slope, surface application	1.00	Seepage	1.00
		Slope, sprinkler application	1.00	Slope, surface application	1.00
		Slow permeability	1.00	Low pH	0.96
		Poor filter	0.99	Stone content	0.22
		Low pH	0.96		
LorB: Lordstown-----	50	Somewhat limited		Very limited	
		Poor filter	0.99	Seepage	1.00
		Low pH	0.96	Depth to bedrock	1.00
		Droughty	0.41	Low pH	0.96
		Slope, surface application	0.08		
		Depth to bedrock	0.06		

Table 23.—Agricultural Disposal of Wastewater by  
Irrigation and Overland Flow—Continued

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation		Overland flow of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
LorB: (cont.)					
Wallpack-----	35	Very limited		Very limited	
		Slow permeability	1.00	Seepage	1.00
		Low pH	0.91	Low pH	0.91
		Slope, surface application	0.08		
LorC:					
Lordstown-----	50	Very limited		Very limited	
		Slope, surface application	1.00	Seepage	1.00
		Poor filter	0.99	Depth to bedrock	1.00
		Low pH	0.96	Slope, surface application	1.00
		Slope, sprinkler application	0.78	Low pH	0.96
		Droughty	0.41		
Wallpack-----	35	Very limited		Very limited	
		Slope, surface application	1.00	Seepage	1.00
		Slow permeability	1.00	Slope, surface application	1.00
		Low pH	0.91	Low pH	0.91
		Slope, sprinkler application	0.78		
LorCh:					
Lordstown, very rocky-----	50	Very limited		Very limited	
		Slope, surface application	1.00	Seepage	1.00
		Poor filter	0.99	Depth to bedrock	1.00
		Low pH	0.96	Slope, surface application	1.00
		Slope, sprinkler application	0.78	Low pH	0.96
		Droughty	0.41		
Wallpack, very rocky	35	Very limited		Very limited	
		Slope, surface application	1.00	Seepage	1.00
		Slow permeability	1.00	Slope, surface application	1.00
		Poor filter	0.99	Low pH	0.96
		Low pH	0.96		
		Slope, sprinkler application	0.78		
LorD:					
Lordstown-----	50	Very limited		Very limited	
		Slope, surface application	1.00	Seepage	1.00
		Slope, sprinkler application	1.00	Slope, surface application	1.00
		Poor filter	0.99	Depth to bedrock	1.00
		Low pH	0.96	Low pH	0.96
		Droughty	0.41		

Table 23.-Agricultural Disposal of Wastewater by  
Irrigation and Overland Flow-Continued

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation		Overland flow of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
LorD: (cont.) Wallpack-----	35	Very limited Slope, surface application Slope, sprinkler application Slow permeability Low pH	1.00 1.00 1.00 0.91	Very limited Slope, surface application Seepage Low pH	1.00 1.00 0.91
LorDh: Lordstown, very rocky-----	50	Very limited Slope, surface application Slope, sprinkler application Poor filter Low pH Droughty	1.00 1.00 0.99 0.96 0.41	Very limited Seepage Slope, surface application Depth to bedrock Low pH	1.00 1.00 1.00 0.96
Wallpack, very rocky	40	Very limited Slope, surface application Slope, sprinkler application Slow permeability Poor filter Low pH	1.00 1.00 1.00 0.99 0.96	Very limited Seepage Slope, surface application Low pH	1.00 1.00 0.96
MabEh: Manlius, very rocky-	60	Very limited Slope, surface application Slope, sprinkler application Droughty Poor filter Low pH	1.00 1.00 1.00 0.99 0.96	Very limited Seepage Slope, surface application Depth to bedrock Cobble content Low pH	1.00 1.00 1.00 1.00 0.96
Nassau, very rocky--	25	Very limited Droughty Depth to bedrock Slope, surface application Slope, sprinkler application Poor filter	1.00 1.00 1.00 1.00 0.99	Very limited Seepage Depth to bedrock Slope, surface application Cobble content Low pH	1.00 1.00 1.00 1.00 0.96
NauBh: Nassau, very rocky--	50	Very limited Droughty Depth to bedrock Cobble content Slope, surface application	1.00 1.00 0.50 0.08	Very limited Depth to bedrock Seepage Cobble content	1.00 1.00 0.95

Table 23.—Agricultural Disposal of Wastewater by  
Irrigation and Overland Flow—Continued

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation		Overland flow of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
NauBh: (cont.)					
Manlius, very rocky-	45	Very limited		Very limited	
		Droughty	1.00	Seepage	1.00
		Cobble content	0.75	Depth to bedrock	1.00
		Depth to bedrock	0.54	Cobble content	1.00
		Slope, surface application	0.08		
NauCh:					
Nassau, very rocky--	55	Very limited		Very limited	
		Droughty	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Seepage	1.00
		Slope, surface application	1.00	Slope, surface application	1.00
		Slope, sprinkler application	0.78	Cobble content	0.95
		Cobble content	0.50		
Manlius, very rocky-	40	Very limited		Very limited	
		Slope, surface application	1.00	Seepage	1.00
		Droughty	1.00	Depth to bedrock	1.00
		Slope, sprinkler application	0.78	Slope, surface application	1.00
		Cobble content	0.75	Cobble content	1.00
		Depth to bedrock	0.54		
NauDh:					
Nassau, very rocky--	50	Very limited		Very limited	
		Droughty	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Slope, surface application	1.00
		Slope, surface application	1.00	Seepage	1.00
		Slope, sprinkler application	1.00	Cobble content	0.95
		Cobble content	0.50		
Manlius, very rocky-	40	Very limited		Very limited	
		Slope, surface application	1.00	Slope, surface application	1.00
		Slope, sprinkler application	1.00	Seepage	1.00
		Droughty	1.00	Depth to bedrock	1.00
		Cobble content	0.75	Cobble content	1.00
		Depth to bedrock	0.54		
NavE:					
Nassau-----	50	Very limited		Very limited	
		Droughty	1.00	Seepage	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope, surface application	1.00	Slope, surface application	1.00
		Slope, sprinkler application	1.00	Cobble content	1.00
		Poor filter	0.99	Low pH	0.96
Rock outcrop-----	45	Not rated		Not rated	



Table 23.—Agricultural Disposal of Wastewater by  
Irrigation and Overland Flow—Continued

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation		Overland flow of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
OpnCh: Oquaga, very rocky--	55	Very limited		Very limited	
		Slope, surface application	1.00	Seepage	1.00
		Droughty	1.00	Depth to bedrock	1.00
		Poor filter	0.99	Slope, surface application	1.00
		Low pH	0.96	Low pH	0.96
		Depth to bedrock	0.84	Cobble content	0.65
Lackawanna, very rocky-----	30	Very limited		Very limited	
		Slope, surface application	1.00	Seepage	1.00
		Slow permeability	1.00	Slope, surface application	1.00
		Poor filter	0.99	Low pH	0.96
		Low pH	0.96	Stone content	0.22
		Slope, sprinkler application	0.78		
OpnDh: Oquaga, very rocky--	50	Very limited		Very limited	
		Slope, surface application	1.00	Seepage	1.00
		Slope, sprinkler application	1.00	Slope, surface application	1.00
		Droughty	1.00	Depth to bedrock	1.00
		Poor filter	0.99	Low pH	0.96
		Low pH	0.96	Cobble content	0.65
Lackawanna, very rocky-----	35	Very limited		Very limited	
		Slope, surface application	1.00	Seepage	1.00
		Slope, sprinkler application	1.00	Slope, surface application	1.00
		Slow permeability	1.00	Low pH	0.96
		Poor filter	0.99	Stone content	0.22
		Low pH	0.96		
OprC: Oquaga-----	75	Very limited		Very limited	
		Droughty	1.00	Seepage	1.00
		Slope, surface application	1.00	Depth to bedrock	1.00
		Poor filter	0.99	Low pH	0.96
		Low pH	0.96	Cobble content	0.65
		Depth to bedrock	0.84	Slope, surface application	0.22
Rock outcrop-----	15	Not rated		Not rated	

Table 23.—Agricultural Disposal of Wastewater by  
Irrigation and Overland Flow—Continued

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation		Overland flow of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
OprE: Oquaga-----	60	Very limited Slope, surface application Slope, sprinkler application Droughty Poor filter Low pH	1.00 1.00 1.00 0.99 0.96	Very limited Seepage Slope, surface application Depth to bedrock Low pH Cobble content	1.00 1.00 1.00 0.96 0.65
Rock outcrop-----	25	Not rated		Not rated	
PHG: Pits, sand and gravel-----	95	Not rated		Not rated	
PohA: Pompton-----	80	Very limited Poor filter Saturated zone Low pH	1.00 1.00 0.99	Very limited Seepage Saturated zone Low pH	1.00 1.00 0.99
QY: Pits, quarry-----	100	Not rated		Not rated	
RkrB: Riverhead-----	85	Very limited Poor filter Low pH Saturated zone Slope, surface application Droughty	1.00 1.00 0.68 0.32 0.18	Very limited Seepage Low pH Saturated zone	1.00 1.00 0.68
RnaF: Rock outcrop-----	40	Not rated		Not rated	
Arnot-----	30	Very limited Droughty Depth to bedrock Slope, surface application Slope, sprinkler application Poor filter	1.00 1.00 1.00 1.00 0.99	Very limited Seepage Depth to bedrock Slope, surface application Low pH	1.00 1.00 1.00 0.96
Rubble land-----	20	Not rated		Not rated	
RnfC: Rock outcrop-----	40	Not rated		Not rated	
Farmington-----	35	Very limited Depth to bedrock Slope, surface application Droughty Poor filter Low pH	1.00 1.00 1.00 0.99 0.96	Very limited Seepage Depth to bedrock Slope, surface application Low pH	1.00 1.00 1.00 0.96

Table 23.—Agricultural Disposal of Wastewater by  
Irrigation and Overland Flow—Continued

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation		Overland flow of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
RnfC: (cont.)					
Galway-----	25	Very limited		Very limited	
		Slope, surface application	1.00	Seepage	1.00
		Poor filter	0.99	Depth to bedrock	1.00
		Low pH	0.96	Slope, surface application	1.00
		Depth to bedrock	0.90	Low pH	0.96
		Droughty	0.83		
RnfD:					
Rock outcrop-----	50	Not rated		Not rated	
Farmington-----	40	Very limited		Very limited	
		Depth to bedrock	1.00	Seepage	1.00
		Slope, surface application	1.00	Depth to bedrock	1.00
		Slope, sprinkler application	1.00	Slope, surface application	1.00
		Droughty	1.00	Low pH	0.96
		Poor filter	0.99		
Galway-----	10	Very limited		Very limited	
		Slope, surface application	1.00	Seepage	1.00
		Slope, sprinkler application	1.00	Slope, surface application	1.00
		Poor filter	0.99	Depth to bedrock	1.00
		Low pH	0.96	Low pH	0.96
		Depth to bedrock	0.90		
RoefBc:					
Rockaway, thin fragipan, extremely stony-----	85	Very limited		Very limited	
		Slow permeability	1.00	Seepage	1.00
		Poor filter	0.99	Low pH	0.96
		Low pH	0.96	Stone content	0.03
		Droughty	0.75		
		Slope, surface application	0.08		
RoefCc:					
Rockaway, thin fragipan, extremely stony-----	85	Very limited		Very limited	
		Slope, surface application	1.00	Seepage	1.00
		Slow permeability	1.00	Slope, surface application	1.00
		Poor filter	0.99	Low pH	0.96
		Low pH	0.96	Stone content	0.03
		Slope, sprinkler application	0.78		

Table 23.—Agricultural Disposal of Wastewater by  
Irrigation and Overland Flow—Continued

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation		Overland flow of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
RoefDc: Rockaway, thin fragipan, extremely stony-----	85	Very limited Slope, surface application Slope, sprinkler application Slow permeability Poor filter Low pH	 1.00 1.00 1.00 0.99 0.96	Very limited Seepage Slope, surface application Low pH Stone content	 1.00 1.00 0.96 0.03
RokB: Rockaway, thin fragipan-----	50	Very limited Slow permeability Poor filter Low pH Droughty Slope, surface application	 1.00 0.99 0.96 0.75 0.08	Very limited Seepage Low pH Stone content	 1.00 0.96 0.03
Chatfield-----	30	Somewhat limited Poor filter Low pH Depth to bedrock Droughty Slope, surface application	 0.99 0.96 0.46 0.29 0.08	Very limited Seepage Depth to bedrock Low pH Cobble content	 1.00 1.00 0.96 0.02
Rock outcrop-----	20	Not rated		Not rated	
RokC: Rockaway, thin fragipan-----	45	Very limited Slope, surface application Slow permeability Poor filter Low pH Slope, sprinkler application	 1.00 1.00 0.99 0.96 0.78	Very limited Seepage Slope, surface application Low pH Stone content	 1.00 1.00 0.96 0.03
Chatfield-----	40	Very limited Slope, surface application Poor filter Low pH Slope, sprinkler application Depth to bedrock	 1.00 0.99 0.96 0.78 0.46	Very limited Seepage Depth to bedrock Slope, surface application Low pH Cobble content	 1.00 1.00 0.96 0.02
Rock outcrop-----	15	Not rated		Not rated	

Table 23.—Agricultural Disposal of Wastewater by  
Irrigation and Overland Flow—Continued

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation		Overland flow of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
RokD: Rockaway, thin fragipan-----	45	Very limited Slope, surface application Slope, sprinkler application Slow permeability Poor filter Low pH	1.00 1.00 1.00 0.99 0.96	Very limited Seepage Slope, surface application Low pH Stone content	1.00 1.00 0.96 0.03
Chatfield-----	25	Very limited Slope, surface application Slope, sprinkler application Poor filter Low pH Depth to bedrock	1.00 1.00 0.99 0.96 0.46	Very limited Seepage Slope, surface application Depth to bedrock Low pH Cobble content	1.00 1.00 1.00 0.96 0.02
Rock outcrop-----	20	Not rated		Not rated	
RooB: Rockaway, thin fragipan-----	50	Very limited Slow permeability Poor filter Low pH Droughty Slope, surface application	1.00 0.99 0.96 0.75 0.08	Very limited Seepage Low pH Stone content	1.00 0.96 0.03
Urban land, Rockaway thin fragipan substratum-----	40	Not rated		Not rated	
RooC: Rockaway, thin fragipan-----	45	Very limited Slope, surface application Slow permeability Poor filter Low pH Slope, sprinkler application	1.00 1.00 0.99 0.96 0.78	Very limited Seepage Slope, surface application Low pH Stone content	1.00 1.00 0.96 0.03
Urban land, Rockaway thin fragipan substratum-----	40	Not rated		Not rated	

Table 23.—Agricultural Disposal of Wastewater by  
Irrigation and Overland Flow—Continued

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation		Overland flow of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
RooD: Rockaway, thin fragipan-----	45	Very limited Slope, surface application Slope, sprinkler application Slow permeability Poor filter Low pH	1.00 1.00 1.00 0.99 0.96	Very limited Seepage Slope, surface application Low pH Stone content	1.00 1.00 0.96 0.03
Urban land, Rockaway thin fragipan substratum-----	40	Not rated		Not rated	
ScoA: Scio-----	80	Very limited Saturated zone Low pH	1.00 0.67	Very limited Saturated zone Seepage Low pH	1.00 1.00 0.67
SwfBc: Swartswood, extremely stony----	90	Somewhat limited Poor filter Low pH Slow permeability Slope, surface application Droughty	0.99 0.96 0.37 0.08 0.03	Very limited Seepage Low pH	1.00 0.96
SwfCc: Swartswood, extremely stony----	90	Very limited Slope, surface application Poor filter Low pH Slope, surface application Slow permeability	1.00 0.99 0.96 0.78 0.37	Very limited Seepage Slope, surface application Low pH	1.00 1.00 0.96
SwfDc: Swartswood, extremely stony----	85	Very limited Slope, surface application Slope, sprinkler application Poor filter Low pH Slow permeability	1.00 1.00 0.99 0.96 0.37	Very limited Seepage Slope, surface application Low pH	1.00 1.00 0.96

Table 23.—Agricultural Disposal of Wastewater by  
Irrigation and Overland Flow—Continued

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation		Overland flow of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
UccAs: Udifluvents, occasionally flooded-----	90	Somewhat limited		Very limited	
		Poor filter	0.99	Flooding	1.00
		Droughty	0.98	Seepage	1.00
		Low pH	0.91	Low pH	0.91
		Flooding	0.60	Saturated zone	0.18
		Saturated zone	0.18		
UdaB: Udorthents-----	100	Very limited		Very limited	
		Low adsorption	1.00	Low adsorption	1.00
		Slow permeability	1.00	Low pH	0.77
		Low pH	0.77		
		Slope, surface application	0.08		
UdaB: Udorthents-----	60	Very limited		Very limited	
		Low adsorption	1.00	Low adsorption	1.00
		Slow permeability	1.00	Low pH	0.77
		Low pH	0.77		
		Slope, surface application	0.08		
Urban land-----	40	Not rated		Not rated	
UnfA: Unadilla-----	80	Not limited		Very limited Seepage	1.00
UnfB: Unadilla-----	80	Somewhat limited Slope, surface application	0.68	Very limited Seepage	1.00
USCHRB: Urban land, Chatfield substratum-----	40	Not rated		Not rated	
Chatfield-----	25	Somewhat limited		Very limited	
		Poor filter	0.99	Seepage	1.00
		Low pH	0.96	Depth to bedrock	1.00
		Depth to bedrock	0.46	Low pH	0.96
		Droughty	0.29	Cobble content	0.02
		Slope, surface application	0.08		
Rock outcrop-----	20	Not rated		Not rated	
USCHRC: Urban land, Chatfield substratum-----	40	Not rated		Not rated	

Table 23.—Agricultural Disposal of Wastewater by  
Irrigation and Overland Flow—Continued

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation		Overland flow of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
USCHRC: (cont.)					
Chatfield-----	25	Very limited Slope, surface application Poor filter Low pH  Slope, sprinkler application Depth to bedrock	1.00 0.99 0.96  0.78 0.46	Very limited Seepage  Depth to bedrock Slope, surface application Low pH Cobble content	1.00  1.00 1.00 0.96 0.02
Rock outcrop-----	20	Not rated		Not rated	
USCHRD:					
Urban land, Chatfield substratum-----	40	Not rated		Not rated	
Chatfield-----	25	Very limited Slope, surface application Slope, sprinkler application Poor filter Low pH Depth to bedrock	1.00 1.00 0.99 0.96 0.46	Very limited Seepage  Slope, surface application Depth to bedrock Low pH Cobble content	1.00  1.00 1.00 0.96 0.02
Rock outcrop-----	20	Not rated		Not rated	
USFARC:					
Urban land, Farmington substratum-----	50	Not rated		Not rated	
Farmington-----	30	Very limited Depth to bedrock Slope, surface application Droughty  Poor filter Low pH	1.00 1.00 1.00  0.99 0.96	Very limited Seepage Depth to bedrock  Slope, surface application Low pH	1.00 1.00  1.00 0.96
Rock outcrop-----	20	Not rated		Not rated	
USFARD:					
Urban land, Farmington substratum-----	40	Not rated		Not rated	
Farmington-----	35	Very limited Depth to bedrock Slope, surface application Slope, sprinkler application Droughty Poor filter	1.00 1.00 1.00 1.00 0.99	Very limited Seepage Depth to bedrock  Slope, surface application Low pH	1.00 1.00  1.00 0.96
Rock outcrop-----	25	Not rated		Not rated	



Table 23.—Agricultural Disposal of Wastewater by  
Irrigation and Overland Flow—Continued

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation		Overland flow of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
USFAWB: Urban land, Farmington substratum-----	50	Not rated		Not rated	
Farmington-----	30	Very limited		Very limited	
		Depth to bedrock	1.00	Seepage	1.00
		Droughty	1.00	Depth to bedrock	1.00
		Poor filter	0.99	Low pH	0.96
		Low pH	0.96		
		Slope, surface application	0.08		
Wassaic-----	20	Somewhat limited		Very limited	
		Poor filter	0.99	Seepage	1.00
		Low pH	0.96	Depth to bedrock	1.00
		Depth to bedrock	0.65	Low pH	0.96
		Droughty	0.48		
		Slope, surface application	0.08		
USHAZA: Urban land, Hazen substratum-----	45	Not rated		Not rated	
Hazen-----	35	Somewhat limited		Very limited	
		Poor filter	0.99	Seepage	1.00
		Low pH	0.96	Stone content	1.00
		Droughty	0.25	Low pH	0.96
Hoosic-----	20	Very limited		Very limited	
		Poor filter	1.00	Seepage	1.00
		Low pH	0.96	Low pH	0.96
		Droughty	0.42	Cobble content	0.03
USHAZB: Urban land, Hazen substratum-----	55	Not rated		Not rated	
Hazen-----	25	Somewhat limited		Very limited	
		Poor filter	0.99	Seepage	1.00
		Low pH	0.96	Stone content	1.00
		Slope, surface application	0.68	Low pH	0.96
		Droughty	0.25		
Hoosic-----	20	Very limited		Very limited	
		Poor filter	1.00	Seepage	1.00
		Low pH	0.96	Low pH	0.96
		Slope, surface application	0.68	Cobble content	0.03
		Droughty	0.42		
USNAMB: Urban land, Nassau substratum-----	45	Not rated		Not rated	

Table 23.—Agricultural Disposal of Wastewater by  
Irrigation and Overland Flow—Continued

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation		Overland flow of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
USNAME: (cont.)					
Nassau-----	30	Very limited		Very limited	
		Droughty	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Seepage	1.00
		Cobble content	0.50	Cobble content	0.95
		Slope, surface application	0.08		
Manlius-----	25	Very limited		Very limited	
		Droughty	1.00	Seepage	1.00
		Cobble content	0.75	Depth to bedrock	1.00
		Depth to bedrock	0.54	Cobble content	1.00
		Slope, surface application	0.08		
USNAMEC:					
Urban land, Nassau substratum-----	55	Not rated		Not rated	
Nassau-----	25	Very limited		Very limited	
		Droughty	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Seepage	1.00
		Slope, surface application	1.00	Slope, surface application	1.00
		Slope, sprinkler application	0.78	Cobble content	0.95
		Cobble content	0.50		
Manlius-----	20	Very limited		Very limited	
		Slope, surface application	1.00	Seepage	1.00
		Droughty	1.00	Depth to bedrock	1.00
		Slope, sprinkler application	0.78	Slope, surface application	1.00
		Cobble content	0.75	Cobble content	1.00
		Depth to bedrock	0.54		
USNAMEC:					
Urban land, Nassau substratum-----	60	Not rated		Not rated	
Nassau-----	25	Very limited		Very limited	
		Droughty	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Slope, surface application	1.00
		Slope, surface application	1.00	Seepage	1.00
		Slope, sprinkler application	1.00	Cobble content	0.95
		Cobble content	0.50		
Manlius-----	15	Very limited		Very limited	
		Slope, surface application	1.00	Slope, surface application	1.00
		Slope, sprinkler application	1.00	Seepage	1.00
		Droughty	1.00	Depth to bedrock	1.00
		Cobble content	0.75	Cobble content	1.00
		Depth to bedrock	0.54		

Table 23.—Agricultural Disposal of Wastewater by  
Irrigation and Overland Flow—Continued

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation		Overland flow of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
USWUSB: Urban land, Wurtsboro substratum-----	45	Not rated		Not rated	
Wurtsboro-----	35	Very limited		Very limited	
		Saturated zone	1.00	Seepage	1.00
		Slow permeability	1.00	Saturated zone	1.00
		Poor filter	0.99	Low pH	0.96
		Low pH	0.96		
		Slope, surface application	0.08		
Swartswood-----	20	Somewhat limited		Very limited	
		Poor filter	0.99	Seepage	1.00
		Low pH	0.96	Low pH	0.96
		Slow permeability	0.37		
		Slope, surface application	0.08		
		Droughty	0.03		
VepBc: Venango, extremely stony-----	90	Very limited		Very limited	
		Saturated zone	1.00	Seepage	1.00
		Slow permeability	1.00	Saturated zone	1.00
		Poor filter	0.99	Low pH	0.96
		Low pH	0.96		
		Slope, surface application	0.08		
VepCc: Venango, extremely stony-----	85	Very limited		Very limited	
		Saturated zone	1.00	Seepage	1.00
		Slope, surface application	1.00	Saturated zone	1.00
		Slow permeability	1.00	Slope, surface application	1.00
		Poor filter	0.99	Low pH	0.96
		Low pH	0.96		
WaahAt: Wallkill, frequently flooded-----	90	Very limited		Very limited	
		Ponding	1.00	Flooding	1.00
		Saturated zone	1.00	Ponding	1.00
		Flooding	1.00	Saturated zone	1.00
		Low pH	0.99	Seepage	1.00
				Low pH	0.99
WabBb: Wallpack, aeolian mantle, very stony-	85	Somewhat limited		Very limited	
		Poor filter	0.99	Seepage	1.00
		Low pH	0.96	Low pH	0.96
		Slope, surface application	0.08	Low adsorption	0.06
		Low adsorption	0.06		

Table 23.—Agricultural Disposal of Wastewater by  
Irrigation and Overland Flow—Continued

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation		Overland flow of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
WabCb: Wallpack, aeolian mantle, very stony-	85	Very limited Slope, surface application Poor filter Low pH Slope, sprinkler application Low adsorption	1.00 0.99 0.96 0.78 0.06	Very limited Seepage Slope, surface application Low pH Low adsorption	1.00 1.00 0.96 0.06
WabDb: Wallpack, aeolian mantle, very stony-	85	Very limited Slope, surface application Slope, sprinkler application Poor filter Low pH Low adsorption	1.00 1.00 0.99 0.96 0.06	Very limited Seepage Slope, surface application Low pH Low adsorption	1.00 1.00 0.96 0.06
WacB: Wallpack-----	85	Very limited Slow permeability Low pH Slope, surface application	1.00 0.91 0.08	Very limited Seepage Low pH	1.00 0.91
WacBc: Wallpack, extremely stony-----	85	Very limited Slow permeability Poor filter Low pH Slope, surface application	1.00 0.99 0.96 0.08	Very limited Seepage Low pH	1.00 0.96
WacC: Wallpack-----	85	Very limited Slope, surface application Slow permeability Low pH Slope, sprinkler application	1.00 1.00 0.91 0.78	Very limited Seepage Slope, surface application Low pH	1.00 1.00 0.91
WacCc: Wallpack, extremely stony-----	85	Very limited Slope, surface application Slow permeability Poor filter Low pH Slope, sprinkler application	1.00 1.00 0.99 0.96 0.78	Very limited Seepage Slope, surface application Low pH	1.00 1.00 0.96

Table 23.—Agricultural Disposal of Wastewater by  
Irrigation and Overland Flow—Continued

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation		Overland flow of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
WacD: Wallpack-----	85	Very limited		Very limited	
		Slope, surface application	1.00	Slope, surface application	1.00
		Slope, sprinkler application	1.00	Seepage	1.00
		Slow permeability	1.00	Low pH	0.91
		Low pH	0.91		
WacDc: Wallpack, extremely stony-----	85	Very limited		Very limited	
		Slope, surface application	1.00	Seepage	1.00
		Slope, sprinkler application	1.00	Slope, surface application	1.00
		Slow permeability	1.00	Low pH	0.96
		Poor filter	0.99		
		Low pH	0.96		
WATER: Water-----	100	Not rated		Not rated	
WecBc: Wellsboro, extremely stony-----	85	Very limited		Very limited	
		Slow permeability	1.00	Seepage	1.00
		Saturated zone	0.99	Saturated zone	0.99
		Low pH	0.91	Low pH	0.91
		Slope, surface application	0.08	Cobble content	0.08
WecCc: Wellsboro, extremely stony-----	85	Very limited		Very limited	
		Slope, surface application	1.00	Seepage	1.00
		Slow permeability	1.00	Slope, surface application	1.00
		Saturated zone	0.99	Saturated zone	0.99
		Low pH	0.91	Low pH	0.91
		Slope, sprinkler application	0.78	Cobble content	0.08
WumBc: Wurtsboro, extremely stony-----	85	Very limited		Very limited	
		Saturated zone	1.00	Seepage	1.00
		Slow permeability	1.00	Saturated zone	1.00
		Poor filter	0.99	Low pH	0.96
		Low pH	0.96		
		Slope, surface application	0.08		

Table 23.—Agricultural Disposal of Wastewater by  
Irrigation and Overland Flow—Continued

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation		Overland flow of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
WusBc: Wurtsboro, extremely stony-----	60	Very limited		Very limited	
		Saturated zone	1.00	Seepage	1.00
		Slow permeability	1.00	Saturated zone	1.00
		Poor filter	0.99	Low pH	0.96
		Low pH	0.96		
		Slope, sprinkler application	0.08		
Swartswood, extremely stony----	40	Very limited		Very limited	
		Poor filter	0.99	Seepage	1.00
		Low pH	0.96	Low pH	0.96
		Slow permeability	0.37		
		Slope, surface application	0.08		
		Droughty	0.03		
WusCc: Wurtsboro, extremely stony-----	60	Very limited		Very limited	
		Saturated zone	1.00	Seepage	1.00
		Slope, surface application	1.00	Saturated zone	1.00
		Slow permeability	1.00	Slope, surface application	1.00
		Poor filter	0.99	Low pH	0.96
		Low pH	0.96		
Swartswood, extremely stony----	40	Very limited		Very limited	
		Slope, surface application	1.00	Seepage	1.00
		Poor filter	0.99	Slope, surface application	1.00
		Low pH	0.96	Low pH	0.96
		Slope, surface application	0.78		
		Slow permeability	0.37		
WusDc: Wurtsboro, extremely stony-----	80	Very limited		Very limited	
		Saturated zone	1.00	Seepage	1.00
		Slope, surface application	1.00	Saturated zone	1.00
		Slope, sprinkler application	1.00	Slope, surface application	1.00
		Slow permeability	1.00	Low pH	0.96
		Poor filter	0.99		

Table 23.—Agricultural Disposal of Wastewater by  
Irrigation and Overland Flow—Continued

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation		Overland flow of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
WusDc: (cont.) Swartswood, extremely stony----	20	Very limited		Very limited	
		Slope, surface application	1.00	Seepage	1.00
		Slope, sprinkler application	1.00	Slope, surface application	1.00
		Poor filter	0.99	Low pH	0.96
		Low pH	0.96		
		Slow permeability	0.37		

Table 24.-Source of Gravel and Sand

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The ratings given for the thickest layer are for the thickest layer above and excluding the bottom layer. The numbers in the value columns range from 0.00 to 0.99. The greater the value, the greater the likelihood that the bottom layer or thickest layer of the soil is a source of sand or gravel. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
AhbBc: Alden, extremely stony-----	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
AhcBc: Alden, gneiss till substratum, extremely stony----	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
AruCh: Arnot, very rocky---	55	Fair		Poor	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.88	Bottom layer	0.00
Lordstown, very rocky-----	40	Fair		Poor	
		Thickest layer	0.07	Bottom layer	0.00
		Bottom layer	0.38	Thickest layer	0.00
ArvD: Arnot-----	45	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.88	Thickest layer	0.00
Lordstown-----	40	Fair		Poor	
		Thickest layer	0.07	Bottom layer	0.00
		Bottom layer	0.38	Thickest layer	0.00
Rock outcrop-----	15	Not rated		Not rated	
ArvE: Arnot-----	60	Fair		Poor	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.88	Bottom layer	0.00
Lordstown-----	25	Fair		Poor	
		Thickest layer	0.07	Thickest layer	0.00
		Bottom layer	0.38	Bottom layer	0.00
Rock outcrop-----	15	Not rated		Not rated	
AtcA: Atherton, very poorly drained-----	60	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00



Table 24.-Source of Gravel and Sand-Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
AtcA: Atherton, poorly drained-----	30	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
CatbA: Catden-----	85	Poor		Poor	
		Bottom layer	0.00	Thickest layer	0.00
		Organic matter content	0.00	Organic matter content	0.00
		Thickest layer	0.00	Bottom layer	0.00
ChkC: Chatfield-----	45	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.05
		Thickest layer	0.00	Thickest layer	0.05
Hollis-----	30	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.05
Rock outcrop-----	25	Not rated		Not rated	
ChkE: Chatfield-----	45	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.05
		Thickest layer	0.00	Thickest layer	0.05
Hollis-----	30	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.05
Rock outcrop-----	20	Not rated		Not rated	
ChwBc: Chippewa, extremely stony-----	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
CorA: Colonie-----	80	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.36
		Thickest layer	0.00	Bottom layer	0.81
CorB: Colonie-----	80	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.36
		Thickest layer	0.00	Bottom layer	0.81
DefAr: Delaware, rarely flooded-----	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
DefBr: Delaware, rarely flooded-----	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Table 24.-Source of Gravel and Sand-Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
FaxC:					
Farmington-----	50	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Rock outcrop-----	40	Not rated		Not rated	
FdwB:					
Farmington-----	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Wassaic-----	30	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Rock outcrop-----	25	Not rated		Not rated	
FmhAs:					
Fluvaquents, occasionally flooded-----	90	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
FrdAb:					
Fredon, very stony--	45	Poor		Fair	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.00	Bottom layer	0.99
Halsey, very stony--	40	Fair		Fair	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.45	Bottom layer	0.99
GawEh:					
Galway, very rocky--	80	Poor		Poor	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.00
HdxAb:					
Hazen, very stony---	50	Fair		Fair	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.22	Bottom layer	0.71
Hoosic, very stony--	40	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.01
		Thickest layer	0.00	Bottom layer	0.43
HdxBb:					
Hazen, very stony---	60	Fair		Fair	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.22	Bottom layer	0.71
HdxBb:					
Hoosic, very stony--	35	Poor		Fair	
		Thickest layer	0.00	Thickest layer	0.01
		Bottom layer	0.00	Bottom layer	0.43

Table 24.-Source of Gravel and Sand-Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
HhmBc: Hibernia, extremely stony-----	80	Good Thickest layer	0.00	Fair Thickest layer Bottom layer	0.00 0.05
HkrgBb: Hinckley, very stony	85	Fair Thickest layer Bottom layer	0.38 0.46	Fair Thickest layer Bottom layer	0.20 0.46
HkrgCb: Hinckley, very stony	85	Fair Thickest layer Bottom layer	0.34 0.46	Fair Thickest layer Bottom layer	0.20 0.46
HncD: Hollis-----	45	Poor Bottom layer Thickest layer	0.00 0.00	Fair Thickest layer Bottom layer	0.00 0.05
Rock outcrop-----	30	Not rated		Not rated	
Chatfield-----	20	Poor Bottom layer Thickest layer	0.00 0.00	Fair Bottom layer Thickest layer	0.05 0.05
HonCb: Hoosic, very stony--	60	Poor Bottom layer Thickest layer	0.00 0.00	Fair Thickest layer Bottom layer	0.01 0.43
Hazen, very stony---	30	Fair Thickest layer Bottom layer	0.00 0.22	Fair Thickest layer Bottom layer	0.00 0.71
HopEb: Hoosic, very stony--	50	Poor Thickest layer Bottom layer	0.00 0.00	Fair Thickest layer Bottom layer	0.01 0.43
Otisville, very stony-----	40	Poor Thickest layer Bottom layer	0.00 0.00	Good Thickest layer	0.19
LacBc: Lackawanna, extremely stony----	85	Poor Thickest layer Bottom layer	0.00 0.00	Poor Thickest layer Bottom layer	0.00 0.00
LacCc: Lackawanna, extremely stony----	85	Poor Bottom layer Thickest layer	0.00 0.00	Poor Bottom layer Thickest layer	0.00 0.00

Table 24.-Source of Gravel and Sand-Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
LacDc: Lackawanna, extremely stony----	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
LorB: Lordstown-----	50	Fair		Poor	
		Thickest layer	0.07	Bottom layer	0.00
		Bottom layer	0.38	Thickest layer	0.00
Wallpack-----	35	Fair		Poor	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.25	Bottom layer	0.00
LorC: Lordstown-----	50	Fair		Poor	
		Thickest layer	0.07	Bottom layer	0.00
		Bottom layer	0.38	Thickest layer	0.00
Wallpack-----	35	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.25	Thickest layer	0.00
LorCh: Lordstown, very rocky-----	50	Fair		Poor	
		Thickest layer	0.07	Bottom layer	0.00
		Bottom layer	0.38	Thickest layer	0.00
Wallpack, very rocky	35	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
LorD: Lordstown-----	50	Fair		Poor	
		Thickest layer	0.07	Bottom layer	0.00
		Bottom layer	0.38	Thickest layer	0.00
Wallpack-----	35	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.25	Thickest layer	0.00
LorDh: Lordstown, very rocky-----	50	Fair		Poor	
		Thickest layer	0.07	Bottom layer	0.00
		Bottom layer	0.38	Thickest layer	0.00
Wallpack, very rocky	40	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
MabEh: Manlius, very rocky-	60	Fair		Poor	
		Thickest layer	0.16	Bottom layer	0.00
		Bottom layer	0.80	Thickest layer	0.00
Nassau, very rocky--	25	Fair		Poor	
		Thickest layer	0.04	Bottom layer	0.00
		Bottom layer	0.80	Thickest layer	0.00

Table 24.-Source of Gravel and Sand-Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
NauBh:					
Nassau, very rocky--	50	Fair		Poor	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.80	Bottom layer	0.00
Manlius, very rocky-	45	Fair		Poor	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.80	Bottom layer	0.00
NauCh:					
Nassau, very rocky--	60	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.80	Thickest layer	0.00
Manlius, very rocky-	40	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.80	Thickest layer	0.00
NauDh:					
Nassau, very rocky--	50	Fair		Poor	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.80	Bottom layer	0.00
Manlius, very rocky-	40	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.80	Thickest layer	0.00
NavE:					
Nassau-----	50	Fair		Poor	
		Thickest layer	0.04	Bottom layer	0.00
		Bottom layer	0.80	Thickest layer	0.00
Rock outcrop-----	45	Not rated		Not rated	
OpnCh:					
Oquaga, very rocky--	55	Fair		Poor	
		Thickest layer	0.12	Thickest layer	0.00
		Bottom layer	0.80	Bottom layer	0.00
Lackawanna, very rocky-----	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
OpnDh:					
Oquaga, very rocky--	50	Fair		Poor	
		Thickest layer	0.12	Bottom layer	0.00
		Bottom layer	0.80	Thickest layer	0.00
OpnDh:					
Lackawanna, very rocky-----	35	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
OprC:					
Oquaga-----	75	Fair		Poor	
		Thickest layer	0.12	Bottom layer	0.00
		Bottom layer	0.80	Thickest layer	0.00
Rock outcrop-----	15	Not rated		Not rated	

Table 24.-Source of Gravel and Sand-Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
OprE: Oquaga-----	60	Fair		Poor	
		Thickest layer	0.12	Bottom layer	0.00
		Bottom layer	0.80	Thickest layer	0.00
Rock outcrop-----	25	Not rated		Not rated	
PHG: Pits, sand and gravel-----	100	Not rated		Not rated	
PohA: Pompton-----	80	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.34
QY: Pits, quarry-----	100	Not rated		Not rated	
RkrB: Riverhead-----	85	Poor		Good	
		Thickest layer	0.00	Thickest layer	0.05
		Bottom layer	0.00		
RnaF: Rock outcrop-----	40	Not rated		Not rated	
Arnot-----	30	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.88	Thickest layer	0.00
Rubble land-----	20	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
RnfC: Rock outcrop-----	40	Not rated		Not rated	
Farmington-----	35	Poor		Poor	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.00
Galway-----	25	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
RnfD: Rock outcrop-----	50	Not rated		Not rated	
Farmington-----	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Galway-----	10	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Table 24.-Source of Gravel and Sand-Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
RoefBc: Rockaway, thin fragipan, extremely stony-----	85	Poor		Fair	
		Thickest layer	0.00	Bottom layer	0.05
		Bottom layer	0.00	Thickest layer	0.05
RoefCc: Rockaway, thin fragipan, extremely stony-----	85	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.05
		Thickest layer	0.00	Thickest layer	0.05
RoefDc: Rockaway, thin fragipan, extremely stony-----	85	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.05
		Thickest layer	0.00	Thickest layer	0.05
RokB: Rockaway, thin fragipan-----	50	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.05
		Thickest layer	0.00	Thickest layer	0.05
Chatfield-----	30	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.05
		Thickest layer	0.00	Thickest layer	0.05
Rock outcrop-----	20	Not rated		Not rated	
RokC: Rockaway, thin fragipan-----	45	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.05
		Thickest layer	0.00	Thickest layer	0.05
Chatfield-----	40	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.05
		Thickest layer	0.00	Thickest layer	0.05
Rock outcrop-----	15	Not rated		Not rated	
RokD: Rockaway, thin fragipan-----	45	Poor		Fair	
		Thickest layer	0.00	Thickest layer	0.05
		Bottom layer	0.00	Bottom layer	0.05
Chatfield-----	25	Poor		Fair	
		Thickest layer	0.00	Thickest layer	0.05
		Bottom layer	0.00	Bottom layer	0.05
Rock outcrop-----	20	Not rated		Not rated	
RooB: Rockaway, thin fragipan-----	50	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.05
		Thickest layer	0.00	Thickest layer	0.05

Table 24.-Source of Gravel and Sand-Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
RooB: (cont.) Urban land, Rockaway, thin fragipan, substratum-----	40	Not rated		Not rated	
RooC: Rockaway, thin fragipan-----	45	Poor		Fair	
		Thickest layer	0.00	Thickest layer	0.05
		Bottom layer	0.00	Bottom layer	0.05
Urban land, Rockaway, thin fragipan, substratum-----	40	Not rated		Not rated	
RooD: Rockaway, thin fragipan-----	45	Poor		Fair	
		Thickest layer	0.00	Thickest layer	0.05
		Bottom layer	0.00	Bottom layer	0.05
Urban land, Rockaway, thin fragipan, substratum-----	40	Not rated		Not rated	
ScoA: Scio-----	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
SwfBc: Swartswood, extremely stony----	90	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.05
SwfCc: Swartswood, extremely stony----	90	Poor		Fair	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.00	Bottom layer	0.05
SwfDc: Swartswood, extremely stony----	85	Poor		Fair	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.00	Bottom layer	0.05
UccAs: Udifluvents, occasionally flooded-----	90	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.10
		Thickest layer	0.00	Thickest layer	0.10
UdaB: Udorthents-----	100	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.10



Table 24.-Source of Gravel and Sand-Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
Udaub:					
Udorthents-----	60	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.10
Urban land, Udorthents substratum-----	40	Not rated		Not rated	
UnfA:					
Unadilla-----	80	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
UnfB:					
Unadilla-----	80	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
USCHRB:					
Urban land, Chatfield substratum-----	40	Not rated		Not rated	
Chatfield-----	25	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.05
		Thickest layer	0.00	Thickest layer	0.05
Rock outcrop-----	20	Not rated		Not rated	
USCHRC:					
Urban land, Chatfield substratum-----	40	Not rated		Not rated	
Chatfield-----	25	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.05
		Thickest layer	0.00	Thickest layer	0.05
Rock outcrop-----	20	Not rated		Not rated	
USCHRD:					
Urban land, Chatfield substratum-----	40	Not rated		Not rated	
Chatfield-----	25	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.05
		Thickest layer	0.00	Thickest layer	0.05
Rock outcrop-----	20	Not rated		Not rated	
USFARC:					
Urban land, Farmington substratum-----	50	Not rated		Not rated	
Farmington-----	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Rock outcrop-----	20	Not rated		Not rated	

Table 24.-Source of Gravel and Sand-Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
USFARD:					
Urban land, Farmington substratum-----	40	Not rated		Not rated	
Farmington-----	35	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Rock outcrop-----	25	Not rated		Not rated	
USFAWB:					
Urban land, Farmington substratum-----	50	Not rated		Not rated	
Farmington-----	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Wassaic-----	20	Poor		Poor	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.00
USHAZA:					
Urban land, Hazen substratum-----	45	Not rated		Not rated	
Hazen-----	35	Fair		Fair	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.22	Bottom layer	0.71
Hoosic-----	20	Poor		Fair	
		Thickest layer	0.00	Thickest layer	0.01
		Bottom layer	0.00	Bottom layer	0.43
USHAZB:					
Urban land, Hazen substratum-----	55	Not rated		Not rated	
Hazen-----	25	Fair		Fair	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.22	Bottom layer	0.71
Hoosic-----	20	Poor		Fair	
		Thickest layer	0.00	Thickest layer	0.01
		Bottom layer	0.00	Bottom layer	0.43
USNAMB:					
Urban land, Nassau substratum-----	45	Not rated		Not rated	
Nassau-----	30	Fair		Poor	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.80	Bottom layer	0.00
Manlius-----	25	Fair		Poor	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.80	Bottom layer	0.00

Table 24.-Source of Gravel and Sand-Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
USNAMC:					
Urban land, Nassau substratum-----	55	Not rated		Not rated	
Nassau-----	25	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.80	Thickest layer	0.00
Manlius-----	20	Fair		Poor	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.80	Bottom layer	0.00
USNAMD:					
Urban land, Nassau substratum-----	60	Not rated		Not rated	
Nassau-----	25	Fair		Poor	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.80	Bottom layer	0.00
Manlius-----	15	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.80	Thickest layer	0.00
USWUSB:					
Urban land, Wurtsboro substratum-----	45	Not rated		Not rated	
Wurtsboro-----	35	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.05
		Thickest layer	0.00	Thickest layer	0.05
Swartswood-----	20	Poor		Fair	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.00	Bottom layer	0.05
VepBc:					
Venango, extremely stony-----	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
VepCc:					
Venango, extremely stony-----	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
WaahAt:					
Wallkill, frequently flooded-----	90	Poor		Poor	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.00	Bottom layer	0.00
WabBb:					
Wallpack, aeolian mantle, very stony-	85	Poor		Poor	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.00	Bottom layer	0.00

Table 24.-Source of Gravel and Sand-Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
WabCb: Wallpack, aeolian mantle, very stony-	85	Poor		Poor	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.00
WabDb: Wallpack, aeolian mantle, very stony-	85	Poor		Poor	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.00
WacB: Wallpack-----	85	Fair		Poor	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.25	Bottom layer	0.00
WacBc: Wallpack, extremely stony-----	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
WacC: Wallpack-----	85	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.25	Thickest layer	0.00
WacCc: Wallpack, extremely stony-----	85	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
WacD: Wallpack-----	85	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.25	Thickest layer	0.00
WacDc: Wallpack, extremely stony-----	85	Poor		Poor	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.00
WATER: Water, greater than 40 acres-----	100	Not rated		Not rated	
WecBc: Wellsboro, extremely stony-----	85	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.05
WecCc: Wellsboro, extremely stony-----	85	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.05

Table 24.-Source of Gravel and Sand-Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
WumBc: Wurtsboro, extremely stony-----	85	Poor		Fair	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.00	Bottom layer	0.05
WusBc: Wurtsboro, extremely stony-----	60	Poor		Fair	
		Thickest layer	0.00	Bottom layer	0.05
		Bottom layer	0.00	Thickest layer	0.05
Swartswood, extremely stony----	40	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.05
WusCc: Wurtsboro, extremely stony-----	60	Poor		Fair	
		Thickest layer	0.00	Bottom layer	0.05
		Bottom layer	0.00	Thickest layer	0.05
WusCc: Swartswood, extremely stony----	40	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.05
WusDc: Wurtsboro, extremely stony-----	80	Poor		Fair	
		Thickest layer	0.00	Thickest layer	0.05
		Bottom layer	0.00	Bottom layer	0.05
Swartswood, extremely stony----	20	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.05

Table 25.—Source of Reclamation Material, Roadfill, and Topsoil

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.00 to 0.99. The smaller the value, the greater the limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
AhbBc: Alden, extremely stony-----	90	Fair		Poor		Poor	
		Organic matter content	0.02	Saturated zone	0.00	Saturated zone	0.00
		Low pH	0.32	Low strength	0.00	Clay content	0.57
		Clay content	0.83				
AhcBc: Alden, gneiss till substratum, extremely stony----	90	Fair		Poor		Poor	
		Organic matter content	0.12	Saturated zone	0.00	Saturated zone	0.00
		Low pH	0.50	Low strength	0.00	Clay content	0.60
		Clay content	0.83			Low pH	0.95
AruCh: Arnot, very rocky---	55	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00			Rock fragments	0.00
		Organic matter content	0.12			Low pH	0.88
		Low pH	0.50				
Lordstown, very rocky-----	40	Fair		Poor		Poor	
		Organic matter content	0.12	Depth to bedrock	0.00	Rock fragments	0.00
		Low pH	0.50			Depth to bedrock	0.93
		Droughty	0.59			Low pH	0.95
		Depth to bedrock	0.93				
ArvD: Arnot-----	45	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.00	Slope	0.00	Depth to bedrock	0.00
		Organic matter content	0.12			Rock fragments	0.00
		Low pH	0.50			Low pH	0.88
Lordstown-----	40	Fair		Poor		Poor	
		Organic matter content	0.12	Depth to bedrock	0.00	Slope	0.00
		Low pH	0.50	Slope	0.00	Rock fragments	0.00
		Droughty	0.59			Depth to bedrock	0.93
		Depth to bedrock	0.93			Low pH	0.95
Rock outcrop-----	15	Not rated		Not rated		Not rated	

Table 25.—Source of Reclamation Material, Roadfill, and Topsoil—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material	Value	Potential source of roadfill	Value	Potential source of topsoil	Value
		Rating class and limiting features		Rating class and limiting features		Rating class and limiting features	
ArvE:							
Arnot-----	60	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.00	Slope	0.00	Depth to bedrock	0.00
		Organic matter content	0.12			Rock fragments	0.00
		Low pH	0.50			Low pH	0.88
Lordstown-----	25	Fair		Poor		Poor	
		Organic matter content	0.12	Slope	0.00	Slope	0.00
		Low pH	0.50	Depth to bedrock	0.00	Rock fragments	0.00
		Droughty	0.59			Depth to bedrock	0.93
		Depth to bedrock	0.93			Low pH	0.95
Rock outcrop-----	15	Not rated		Not rated		Not rated	
AtcA:							
Atherton, very poorly drained----	60	Fair		Poor		Poor	
		Low pH	0.88	Saturated zone	0.00	Saturated zone	0.00
				Low strength	0.00		
Atherton, poorly drained-----	30	Fair		Poor		Poor	
		Organic matter content	0.50	Saturated zone	0.00	Saturated zone	0.00
		Low pH	0.97	Low strength	0.00		
		Water erosion	0.99				
CatbA:							
Catden-----	85	Fair		Poor		Poor	
		Low pH	0.50	Saturated zone	0.00	Saturated zone	0.00
						Organic matter content	0.00
						Low pH	0.99
ChkC:							
Chatfield-----	45	Fair		Poor		Fair	
		Organic matter content	0.08	Depth to bedrock	0.00	Rock fragments	0.20
		Low pH	0.50	Cobble content	0.98	Depth to bedrock	0.54
		Depth to bedrock	0.54			Low pH	0.98
		Droughty	0.71				
Hollis-----	30	Poor		Poor		Poor	
		Depth to bedrock	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Droughty	0.00			Rock fragments	0.00
		Organic matter content	0.02			Low pH	0.98
		Low pH	0.50				
Rock outcrop-----	25	Not rated		Not rated		Not rated	
ChkE:							
Chatfield-----	45	Fair		Poor		Poor	
		Organic matter content	0.08	Slope	0.00	Slope	0.00
		Low pH	0.50	Depth to bedrock	0.00	Rock fragments	0.20
		Depth to bedrock	0.54	Cobble content	0.98	Depth to bedrock	0.54
		Droughty	0.71			Low pH	0.98

Table 25.—Source of Reclamation Material, Roadfill, and Topsoil—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material	Value	Potential source of roadfill	Value	Potential source of topsoil	Value
		Rating class and limiting features		Rating class and limiting features		Rating class and limiting features	
ChkE: (cont.) Hollis-----	30	Poor Droughty Depth to bedrock Organic matter content Low pH	0.00 0.00 0.02 0.50	Poor Depth to bedrock Slope	0.00 0.00	Poor Depth to bedrock Rock fragments Slope Low pH	0.00 0.00 0.00 0.98
Rock outcrop-----	20	Not rated		Not rated		Not rated	
ChwBc: Chippewa, extremely stony-----	80	Fair Droughty Organic matter content Low pH	0.04 0.08 0.50	Poor Saturated zone	0.00	Poor Saturated zone	0.00
CorA: Colonie-----	80	Poor Sand content Wind erosion Organic matter content Low pH Droughty	0.00 0.00 0.08 0.54 0.59	Good		Poor Sand content Low pH	0.00 0.98
CorB: Colonie-----	80	Poor Sand content Wind erosion Organic matter content Low pH Droughty	0.00 0.00 0.08 0.54 0.59	Good		Poor Sand content Low pH	0.00 0.98
DefAr: Delaware, rarely flooded-----	80	Fair Organic matter content Low pH	0.03 0.54	Good		Fair Low pH	0.98
DefBr: Delaware, rarely flooded-----	80	Fair Organic matter content Low pH	0.03 0.54	Good		Fair Low pH	0.98
FaxC: Farmington-----	50	Poor Depth to bedrock Droughty Low pH	0.00 0.00 0.50	Poor Depth to bedrock	0.00	Poor Depth to bedrock Low pH	0.00 0.99
Rock outcrop-----	40	Not rated		Not rated		Not rated	



Table 25.—Source of Reclamation Material, Roadfill, and Topsoil—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material	Value	Potential source of roadfill	Value	Potential source of topsoil	Value
		Rating class and limiting features		Rating class and limiting features		Rating class and limiting features	
FdwB: Farmington-----	40	Poor Droughty Depth to bedrock Low pH	 0.00 0.00 0.50	Poor Depth to bedrock	 0.00	Poor Depth to bedrock Low pH	 0.00 0.99
Wassaic-----	30	Fair Depth to bedrock Droughty Low pH Clay content Water erosion	 0.35 0.52 0.74 0.83 0.99	Poor Depth to bedrock Low strength	 0.00 0.00	Fair Depth to bedrock Clay content	 0.35 0.66
Rock outcrop-----	25	Not rated		Not rated		Not rated	
FmhAs: Fluvaquents, occasionally flooded-----	90	Fair Organic matter content Low pH Water erosion	 0.12 0.84 0.90	Poor Saturated zone	 0.00	Poor Saturated zone	 0.00
FrdAb: Fredon, very stony--	45	Fair Sand content Organic matter content Low pH Droughty	 0.02 0.03 0.74 0.97	Fair Saturated zone	 0.02	Poor Hard to reclaim (rock fragments) Rock fragments Saturated zone Sand content	 0.00 0.00 0.02 0.02
Halsey, very stony--	40	Poor Sand content Organic matter content Low pH Droughty	 0.00 0.12 0.46 0.99	Poor Saturated zone	 0.00	Poor Saturated zone Hard to reclaim (rock fragments) Rock fragments Sand content	 0.00 0.00 0.00 0.00
GawEh: Galway, very rocky--	80	Fair Depth to bedrock Droughty Low pH Organic matter content	 0.10 0.17 0.50 0.50	Poor Slope Depth to bedrock	 0.00 0.00	Poor Slope Rock fragments Depth to bedrock Low pH	 0.00 0.04 0.10 0.95
HdxAb: Hazen, very stony---	50	Poor Stone content Sand content Organic matter content Droughty Low pH	 0.00 0.02 0.03 0.75 0.84	Poor Stone content	 0.00	Poor Hard to reclaim (rock fragments) Sand content Rock fragments	 0.00 0.02 0.92

Table 25.—Source of Reclamation Material, Roadfill, and Topsoil—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material	Value	Potential source of roadfill	Value	Potential source of topsoil	Value
		Rating class and limiting features		Rating class and limiting features		Rating class and limiting features	
HdxAb: Hoosic, very stony--	40	Fair		Fair		Poor	
		Organic matter content	0.03	Cobble content	0.97	Rock fragments	0.00
		Low pH	0.32			Hard to reclaim (rock fragments)	0.00
		Droughty	0.58			Sand content	0.87
		Sand content	0.87			Low pH	0.88
HdxBb: Hazen, very stony---	60	Poor		Poor		Poor	
		Stone content	0.00	Stone content	0.00	Hard to reclaim (rock fragments)	0.00
		Sand content	0.02			Sand content	0.02
		Organic matter content	0.03			Rock fragments	0.92
		Droughty	0.75				
		Low pH	0.84				
Hoosic, very stony--	35	Fair		Fair		Poor	
		Organic matter content	0.03	Cobble content	0.97	Rock fragments	0.00
		Low pH	0.32			Hard to reclaim (rock fragments)	0.00
		Droughty	0.58			Sand content	0.87
		Sand content	0.87			Low pH	0.88
HhmBc: Hibernia, extremely stony-----	80	Fair		Poor		Poor	
		Organic matter content	0.02	Saturated zone	0.00	Saturated zone	0.00
		Low pH	0.50			Hard to reclaim (rock fragments)	0.00
						Rock fragments	0.32
						Low pH	0.95
HkrgBb: Hinckley, very stony	85	Poor		Poor		Poor	
		Sand content	0.00	Cobble content	0.00	Hard to reclaim (rock fragments)	0.00
		Wind erosion	0.00			Rock fragments	0.00
		Droughty	0.00			Sand content	0.00
		Organic matter content	0.12				
		Low pH	0.50				
		Cobble content	0.79				
HkrgCb: Hinckley, very stony	85	Poor		Poor		Poor	
		Sand content	0.00	Cobble content	0.00	Sand content	0.00
		Wind erosion	0.00			Rock fragments	0.00
		Droughty	0.00			Hard to reclaim (rock fragments)	0.00
		Organic matter content	0.12			Slope	0.37
		Low pH	0.50				
		Cobble content	0.79				

Table 25.—Source of Reclamation Material, Roadfill, and Topsoil—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
HncD:							
Hollis-----	45	Poor		Poor		Poor	
		Depth to bedrock	0.00	Depth to bedrock	0.00	Slope	0.00
		Droughty	0.00	Slope	0.00	Depth to bedrock	0.00
		Organic matter content	0.02			Rock fragments	0.00
		Low pH	0.50			Low pH	0.98
Rock outcrop-----	30	Not rated		Not rated		Not rated	
Chatfield-----	20	Fair		Poor		Poor	
		Organic matter content	0.08	Depth to bedrock	0.00	Slope	0.00
		Low pH	0.50	Slope	0.00	Rock fragments	0.20
		Depth to bedrock	0.54	Cobble content	0.98	Depth to bedrock	0.54
		Droughty	0.71			Low pH	0.98
HonCb:							
Hoosic, very stony--	60	Fair		Fair		Poor	
		Organic matter content	0.03	Cobble content	0.97	Rock fragments	0.00
		Low pH	0.32			Hard to reclaim (rock fragments)	0.00
		Droughty	0.58			Slope	0.37
		Sand content	0.87			Sand content	0.87
						Low pH	0.88
Hazen, very stony---	30	Poor		Poor		Poor	
		Stone content	0.00	Stone content	0.00	Hard to reclaim (rock fragments)	0.00
		Sand content	0.02			Sand content	0.02
		Organic matter content	0.03			Slope	0.37
		Droughty	0.75			Rock fragments	0.92
		Low pH	0.84				
HopEb:							
Hoosic, very stony--	50	Fair		Poor		Poor	
		Organic matter content	0.03	Slope	0.00	Hard to reclaim (rock fragments)	0.00
		Low pH	0.32	Cobble content	0.97	Slope	0.00
		Droughty	0.58			Rock fragments	0.00
		Sand content	0.87			Sand content	0.87
						Low pH	0.88
Otisville, very stony-----	40	Poor		Poor		Poor	
		Droughty	0.00	Slope	0.00	Slope	0.00
		Sand content	0.00			Sand content	0.00
		Organic matter content	0.03			Rock fragments	0.00
		Low pH	0.20			Low pH	0.95
LacBc:							
Lackawanna, extremely stony----	85	Fair		Fair		Poor	
		Organic matter content	0.12	Stone content	0.78	Rock fragments	0.00
		Low pH	0.50			Hard to reclaim (rock fragments)	0.32
		Stone content	0.65			Low pH	0.98

Table 25.—Source of Reclamation Material, Roadfill, and Topsoil—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
LacCc: Lackawanna, extremely stony----	85	Fair		Fair		Poor	
		Organic matter content	0.12	Stone content	0.78	Rock fragments	0.00
		Low pH	0.50			Hard to reclaim (rock fragments)	0.32
		Stone content	0.65			Slope	0.37
						Low pH	0.98
LacDc: Lackawanna, extremely stony----	85	Fair		Poor		Poor	
		Organic matter content	0.12	Slope	0.00	Slope	0.00
		Low pH	0.50	Stone content	0.78	Rock fragments	0.00
		Stone content	0.65			Hard to reclaim (rock fragments)	0.32
						Low pH	0.98
LorB: Lordstown-----	50	Fair		Poor		Poor	
		Organic matter content	0.12	Depth to bedrock	0.00	Rock fragments	0.00
		Low pH	0.50			Depth to bedrock	0.93
		Droughty	0.59			Low pH	0.95
		Depth to bedrock	0.93				
Wallpack-----	35	Fair		Good		Poor	
		Organic matter content	0.02			Hard to reclaim (rock fragments)	0.00
		Low pH	0.54			Rock fragments	0.00
		Water erosion	0.99				
LorC: Lordstown-----	50	Fair		Poor		Poor	
		Organic matter content	0.12	Depth to bedrock	0.00	Rock fragments	0.00
		Low pH	0.50			Slope	0.37
		Droughty	0.59			Depth to bedrock	0.93
		Depth to bedrock	0.93			Low pH	0.95
Wallpack-----	35	Fair		Good		Poor	
		Organic matter content	0.02			Hard to reclaim (rock fragments)	0.00
		Low pH	0.54			Rock fragments	0.00
		Water erosion	0.99			Slope	0.37
LorCh: Lordstown, very rocky-----	50	Fair		Poor		Poor	
		Organic matter content	0.12	Depth to bedrock	0.00	Rock fragments	0.00
		Low pH	0.50			Slope	0.37
		Droughty	0.59			Depth to bedrock	0.93
		Depth to bedrock	0.93			Low pH	0.95
Wallpack, very rocky	35	Fair		Good		Fair	
		Organic matter content	0.02			Slope	0.37
		Low pH	0.54			Rock fragments	0.50

Table 25.—Source of Reclamation Material, Roadfill, and Topsoil—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
LorD:							
Lordstown-----	50	Fair		Poor		Poor	
		Organic matter content	0.12	Depth to bedrock	0.00	Rock fragments	0.00
		Low pH	0.50	Slope	0.50	Slope	0.00
		Droughty	0.59			Depth to bedrock	0.93
		Depth to bedrock	0.93			Low pH	0.95
Wallpack-----	35	Fair		Fair		Poor	
		Organic matter content	0.02	Slope	0.50	Slope	0.00
		Low pH	0.54			Hard to reclaim (rock fragments)	0.00
		Water erosion	0.99			Rock fragments	0.00
LorDh:							
Lordstown, very rocky-----	50	Fair		Poor		Poor	
		Organic matter content	0.12	Slope	0.00	Slope	0.00
		Low pH	0.50	Depth to bedrock	0.00	Rock fragments	0.00
		Droughty	0.59			Depth to bedrock	0.93
		Depth to bedrock	0.93			Low pH	0.95
Wallpack, very rocky	40	Fair		Poor		Poor	
		Organic matter content	0.02	Slope	0.00	Slope	0.00
		Low pH	0.54			Rock fragments	0.50
MabEh:							
Manlius, very rocky-	60	Poor		Poor		Poor	
		Droughty	0.00	Slope	0.00	Slope	0.00
		Depth to bedrock	0.29	Depth to bedrock	0.00	Rock fragments	0.00
		Organic matter content	0.50	Cobble content	0.00	Depth to bedrock	0.29
		Cobble content	0.59				
		Low pH	0.99				
Nassau, very rocky--	25	Poor		Poor		Poor	
		Depth to bedrock	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Droughty	0.00	Slope	0.00	Slope	0.00
		Organic matter content	0.50	Cobble content	0.00	Rock fragments	0.00
		Cobble content	0.61				
		Low pH	0.99				
NauBh:							
Nassau, very rocky--	50	Poor		Poor		Poor	
		Depth to bedrock	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Droughty	0.00	Cobble content	0.05	Depth to bedrock	0.00
		Cobble content	0.85				
		Low pH	0.99				
Manlius, very rocky-	45	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Depth to bedrock	0.46	Cobble content	0.00	Depth to bedrock	0.46
		Organic matter content	0.50				
		Cobble content	0.67				
		Low pH	0.99				

Table 25.—Source of Reclamation Material, Roadfill, and Topsoil—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
NauCh: Nassau, very rocky--	55	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Depth to bedrock	0.00	Cobble content	0.05	Depth to bedrock	0.00
		Cobble content	0.85			Slope	0.37
		Low pH	0.99				
Manlius, very rocky--	40	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Depth to bedrock	0.46	Cobble content	0.00	Slope	0.37
		Organic matter content	0.50			Depth to bedrock	0.46
		Cobble content	0.67				
		Low pH	0.99				
NauDh: Nassau, very rocky--	50	Poor		Poor		Poor	
		Depth to bedrock	0.00	Slope	0.00	Slope	0.00
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Cobble content	0.85	Cobble content	0.05	Depth to bedrock	0.00
		Low pH	0.99				
Manlius, very rocky--	40	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.46	Cobble content	0.00	Rock fragments	0.00
		Organic matter content	0.50	Slope	0.00	Depth to bedrock	0.46
		Cobble content	0.67				
		Low pH	0.99				
NavE: Nassau-----	50	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Depth to bedrock	0.00	Slope	0.00	Depth to bedrock	0.00
		Organic matter content	0.50	Cobble content	0.00	Slope	0.00
		Cobble content	0.61				
		Low pH	0.99				
Rock outcrop-----	45	Not rated		Not rated		Not rated	
OpnCh: Oquaga, very rocky--	55	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Depth to bedrock	0.16	Cobble content	0.35	Depth to bedrock	0.16
		Organic matter content	0.50			Slope	0.37
		Low pH	0.50			Low pH	0.76
		Cobble content	0.99				
Lackawanna, very rocky-----	30	Fair		Fair		Poor	
		Organic matter content	0.12	Stone content	0.78	Rock fragments	0.00
		Low pH	0.50			Hard to reclaim (rock fragments)	0.32
		Stone content	0.65			Slope	0.37
						Low pH	0.98

Table 25.—Source of Reclamation Material, Roadfill, and Topsoil—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
OpnDh: Oquaga, very rocky--	50	Poor Droughty Depth to bedrock Low pH Organic matter content Cobble content	 0.00 0.16 0.50 0.50 0.99	Poor Depth to bedrock Slope Cobble content	 0.00 0.00 0.35	Poor Slope Rock fragments Depth to bedrock Low pH	 0.00 0.00 0.16 0.76
Lackawanna, very rocky-----	35	Fair Organic matter content Low pH Stone content	 0.12 0.50 0.65	Poor Slope Stone content	 0.00 0.78	Poor Slope Rock fragments Hard to reclaim (rock fragments) Low pH	 0.00 0.00 0.32 0.98
OprC: Oquaga-----	75	Poor Droughty Depth to bedrock Low pH Organic matter content Cobble content	 0.00 0.16 0.50 0.50 0.99	Poor Depth to bedrock Cobble content	 0.00 0.35	Poor Rock fragments Depth to bedrock Low pH	 0.00 0.16 0.76
Rock outcrop-----	15	Not rated		Not rated		Not rated	
OprE: Oquaga-----	60	Poor Droughty Depth to bedrock Organic matter content Low pH Cobble content	 0.00 0.16 0.50 0.50 0.99	Poor Slope Depth to bedrock Cobble content	 0.00 0.00 0.35	Poor Rock fragments Slope Depth to bedrock Low pH	 0.00 0.00 0.16 0.76
Rock outcrop-----	25	Not rated		Not rated		Not rated	
PHG: Pits, sand and gravel-----	95	Not rated		Not rated		Not rated	
PohA: Pompton-----	80	Poor Organic matter content Low pH	 0.00 0.12	Fair Saturated zone	 0.04	Fair Saturated zone Low pH	 0.04 0.98
QY: Pits, quarry-----	100	Not rated		Not rated		Not rated	
RkrB: Riverhead-----	85	Fair Organic matter content Low pH Droughty	 0.02 0.12 0.82	Fair Saturated zone	 0.98	Fair Low pH Saturated zone	 0.59 0.98

Table 25.—Source of Reclamation Material, Roadfill, and Topsoil—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material	Value	Potential source of roadfill	Value	Potential source of topsoil	Value
		Rating class and limiting features		Rating class and limiting features		Rating class and limiting features	
RnaF:							
Rock outcrop-----	40	Not rated		Not rated		Not rated	
Arnot-----	30	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Slope	0.00	Rock fragments	0.00
		Organic matter content	0.12			Slope	0.00
		Low pH	0.50			Low pH	0.88
Rubble land-----	20	Not rated		Poor		Not rated	
				Slope	0.00		
				Stone content	0.00		
				Cobble content	0.00		
RnfC:							
Rock outcrop-----	40	Not rated		Not rated		Not rated	
Farmington-----	35	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00			Slope	0.37
		Low pH	0.50			Low pH	0.99
Galway-----	25	Fair		Poor		Fair	
		Depth to bedrock	0.10	Depth to bedrock	0.00	Rock fragments	0.04
		Droughty	0.17			Depth to bedrock	0.10
		Organic matter content	0.50			Slope	0.37
		Low pH	0.50			Low pH	0.95
RnfD:							
Rock outcrop-----	50	Not rated		Not rated		Not rated	
Farmington-----	40	Poor		Poor		Poor	
		Depth to bedrock	0.00	Slope	0.00	Slope	0.00
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Low pH	0.50			Low pH	0.99
Galway-----	10	Fair		Poor		Poor	
		Depth to bedrock	0.10	Slope	0.00	Slope	0.00
		Droughty	0.17	Depth to bedrock	0.00	Rock fragments	0.04
		Organic matter content	0.50			Depth to bedrock	0.10
		Low pH	0.50			Low pH	0.95
RoefBc:							
Rockaway, thin fragipan, extremely stony-----	85	Fair		Fair		Fair	
		Organic matter content	0.05	Stone content	0.97	Rock fragments	0.18
		Low pH	0.20			Hard to reclaim (rock fragments)	0.68
		Droughty	0.25			Low pH	0.88



Table 25.—Source of Reclamation Material, Roadfill, and Topsoil—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
RoefCc: Rockaway, thin fragipan, extremely stony-----	85	Fair		Fair		Fair	
		Organic matter content	0.05	Stone content	0.97	Rock fragments	0.18
		Low pH	0.20			Slope	0.37
		Droughty	0.25			Hard to reclaim (rock fragments)	0.68
						Low pH	0.88
RoefDc: Rockaway, thin fragipan, extremely stony-----	85	Fair		Poor		Poor	
		Organic matter content	0.05	Slope	0.00	Slope	0.00
		Low pH	0.20	Stone content	0.97	Rock fragments	0.18
		Droughty	0.25			Hard to reclaim (rock fragments)	0.68
						Low pH	0.88
RokB: Rockaway, thin fragipan-----	50	Fair		Fair		Fair	
		Organic matter content	0.05	Stone content	0.97	Rock fragments	0.18
		Low pH	0.20			Hard to reclaim (rock fragments)	0.68
		Droughty	0.25			Low pH	0.88
Chatfield-----	30	Fair		Poor		Fair	
		Organic matter content	0.08	Depth to bedrock	0.00	Rock fragments	0.20
		Low pH	0.50	Cobble content	0.98	Depth to bedrock	0.54
		Depth to bedrock	0.54			Low pH	0.98
		Droughty	0.71				
Rock outcrop-----	20	Not rated		Not rated		Not rated	
RokC: Rockaway, thin fragipan-----	45	Fair		Fair		Fair	
		Organic matter content	0.05	Stone content	0.97	Rock fragments	0.18
		Low pH	0.20			Slope	0.37
		Droughty	0.25			Hard to reclaim (rock fragments)	0.68
						Low pH	0.88
Chatfield-----	40	Fair		Poor		Fair	
		Organic matter content	0.08	Depth to bedrock	0.00	Rock fragments	0.20
		Low pH	0.50	Cobble content	0.98	Slope	0.37
		Depth to bedrock	0.54			Depth to bedrock	0.54
		Droughty	0.71			Low pH	0.98
Rock outcrop-----	15	Not rated		Not rated		Not rated	

Table 25.—Source of Reclamation Material, Roadfill, and Topsoil—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material	Value	Potential source of roadfill	Value	Potential source of topsoil	Value
		Rating class and limiting features		Rating class and limiting features		Rating class and limiting features	
RokD: Rockaway, thin fragipan-----	45	Fair		Poor		Poor	
		Organic matter content	0.05	Slope	0.00	Slope	0.00
		Low pH	0.20	Stone content	0.97	Rock fragments	0.18
		Droughty	0.25			Hard to reclaim (rock fragments)	0.68
						Low pH	0.88
		Organic matter content	0.08	Depth to bedrock	0.00	Slope	0.00
		Low pH	0.50	Slope	0.00	Rock fragments	0.20
		Depth to bedrock	0.54	Cobble content	0.98	Depth to bedrock	0.54
		Droughty	0.71			Low pH	0.98
Rock outcrop-----	20	Not rated		Not rated		Not rated	
RooB: Rockaway, thin fragipan-----	50	Fair		Fair		Fair	
		Organic matter content	0.05	Stone content	0.97	Rock fragments	0.18
		Low pH	0.20			Hard to reclaim (rock fragments)	0.68
		Droughty	0.25			Low pH	0.88
Urban land, Rockaway thin fragipan substratum-----	40	Not rated		Not rated		Not rated	
RooC: Rockaway, thin fragipan-----	45	Fair		Fair		Fair	
		Organic matter content	0.05	Stone content	0.97	Rock fragments	0.18
		Low pH	0.20			Slope	0.37
		Droughty	0.25			Hard to reclaim (rock fragments)	0.68
						Low pH	0.88
Urban land, Rockaway thin fragipan substratum-----	40	Not rated		Not rated		Not rated	
RooD: Rockaway, thin fragipan-----	45	Fair		Fair		Poor	
		Organic matter content	0.05	Slope	0.50	Slope	0.00
		Low pH	0.20	Stone content	0.97	Rock fragments	0.18
		Droughty	0.25			Hard to reclaim (rock fragments)	0.68
						Low pH	0.88
Urban land, Rockaway thin fragipan substratum-----	40	Not rated		Not rated		Not rated	

Table 25.—Source of Reclamation Material, Roadfill, and Topsoil—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
ScoA:							
Scio-----	80	Fair		Fair		Fair	
		Organic matter content	0.08	Saturated zone	0.32	Saturated zone	0.32
		Water erosion	0.68				
		Low pH	0.74				
SwfBc:							
Swartswood, extremely stony----	90	Fair		Good		Poor	
		Organic matter content	0.12			Rock fragments	0.00
		Low pH	0.50			Hard to reclaim (rock fragments)	0.80
		Droughty	0.97			Low pH	0.88
SwfCc:							
Swartswood, extremely stony----	90	Fair		Good		Poor	
		Organic matter content	0.12			Rock fragments	0.00
		Low pH	0.50			Slope	0.37
		Droughty	0.97			Hard to reclaim (rock fragments)	0.80
						Low pH	0.88
SwfDc:							
Swartswood, extremely stony----	85	Fair		Poor Slope		Poor Slope	
		Organic matter content	0.12		0.00		
		Low pH	0.50			Rock fragments	0.00
		Droughty	0.97			Hard to reclaim (rock fragments)	0.80
						Low pH	0.88
UccAs:							
Udifluvents, occasionally flooded-----	90	Fair		Good		Fair	
		Droughty	0.02			Sand content	0.04
		Sand content	0.04				
		Organic matter content	0.50				
		Low pH	0.54				
UdaB:							
Udorthents-----	100	Poor		Good		Poor	
		Sand content	0.00			Sand content	0.00
		Low pH	0.68				
		Organic matter content	0.88				
UdaB:							
Udorthents-----	60	Poor		Good		Poor	
		Sand content	0.00			Sand content	0.00
		Low pH	0.68				
		Organic matter content	0.88				
Urban land-----	40	Not rated		Not rated		Not rated	

Table 25.—Source of Reclamation Material, Roadfill, and Topsoil—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material	Value	Potential source of roadfill	Value	Potential source of topsoil	Value
		Rating class and limiting features		Rating class and limiting features		Rating class and limiting features	
UnfA:							
Unadilla-----	80	Fair		Good		Good	
		Organic matter content	0.08				
		Water erosion	0.68				
UnfB:							
Unadilla-----	80	Fair		Good		Good	
		Organic matter content	0.08				
		Water erosion	0.68				
USCHRB:							
Urban land, Chatfield substratum-----	40	Not rated		Not rated		Not rated	
Chatfield-----	25	Fair		Poor		Fair	
		Organic matter content	0.08	Depth to bedrock	0.00	Rock fragments	0.20
		Low pH	0.50	Cobble content	0.98	Depth to bedrock	0.54
		Depth to bedrock	0.54			Low pH	0.98
		Droughty	0.71				
Rock outcrop-----	20	Not rated		Not rated		Not rated	
USCHRC:							
Urban land, Chatfield substratum-----	40	Not rated		Not rated		Not rated	
Chatfield-----	25	Fair		Poor		Fair	
		Organic matter content	0.08	Depth to bedrock	0.00	Rock fragments	0.20
		Low pH	0.50	Cobble content	0.98	Slope	0.37
		Depth to bedrock	0.54			Depth to bedrock	0.54
		Droughty	0.71			Low pH	0.98
Rock outcrop-----	20	Not rated		Not rated		Not rated	
USCHRD:							
Urban land, Chatfield substratum-----	40	Not rated		Not rated		Not rated	
Chatfield-----	25	Fair		Poor		Poor	
		Organic matter content	0.08	Depth to bedrock	0.00	Slope	0.00
		Low pH	0.50	Slope	0.00	Rock fragments	0.20
		Depth to bedrock	0.54	Cobble content	0.98	Depth to bedrock	0.54
		Droughty	0.71			Low pH	0.98
Rock outcrop-----	20	Not rated		Not rated		Not rated	
USFARC:							
Urban land, Farmington substratum-----	50	Not rated		Not rated		Not rated	

Table 25.—Source of Reclamation Material, Roadfill, and Topsoil—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
USFARC: (cont.)							
Farmington-----	30	Poor		Poor		Poor	
		Depth to bedrock	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Droughty	0.00			Slope	0.37
		Low pH	0.50			Low pH	0.99
Rock outcrop-----	20	Not rated		Not rated		Not rated	
USFARD:							
Urban land, Farmington substratum-----	40	Not rated		Not rated		Not rated	
Farmington-----	35	Poor		Poor		Poor	
		Depth to bedrock	0.00	Depth to bedrock	0.00	Slope	0.00
		Droughty	0.00	Slope	0.00	Depth to bedrock	0.00
		Low pH	0.50			Low pH	0.99
Rock outcrop-----	25	Not rated		Not rated		Not rated	
USFAWB:							
Urban land, Farmington substratum-----	50	Not rated		Not rated		Not rated	
Farmington-----	30	Poor		Poor		Poor	
		Depth to bedrock	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Droughty	0.00			Low pH	0.99
		Low pH	0.50				
Wassaic-----	20	Fair		Poor		Fair	
		Depth to bedrock	0.35	Depth to bedrock	0.00	Depth to bedrock	0.35
		Droughty	0.52	Low strength	0.00	Clay content	0.66
		Low pH	0.74				
		Clay content	0.83				
		Water erosion	0.99				
USHAZA:							
Urban land, Hazen substratum-----	45	Not rated		Not rated		Not rated	
Hazen-----	35	Poor		Poor		Poor	
		Stone content	0.00	Stone content	0.00	Hard to reclaim (rock fragments)	0.00
		Sand content	0.02			Sand content	0.02
		Organic matter content	0.03			Rock fragments	0.92
		Droughty	0.75				
		Low pH	0.84				
Hoosic-----	20	Fair		Fair		Poor	
		Organic matter content	0.03	Cobble content	0.97	Rock fragments	0.00
		Low pH	0.32			Hard to reclaim (rock fragments)	0.00
		Droughty	0.58			Sand content	0.87
		Sand content	0.87			Low pH	0.88

Table 25.—Source of Reclamation Material, Roadfill, and Topsoil—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material	Potential source of roadfill	Potential source of topsoil			
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
USHAZB: Urban land, Hazen substratum-----	55	Not rated		Not rated		Not rated	
Hazen-----	25	Poor		Poor		Poor	
		Stone content	0.00	Stone content	0.00	Hard to reclaim (rock fragments)	0.00
		Sand content	0.02			Sand content	0.02
		Organic matter content	0.03			Rock fragments	0.92
		Droughty	0.75				
		Low pH	0.84				
Hoosic-----	20	Fair		Fair		Poor	
		Organic matter content	0.03	Cobble content	0.97	Rock fragments	0.00
		Low pH	0.32			Hard to reclaim (rock fragments)	0.00
		Droughty	0.58			Sand content	0.87
		Sand content	0.87			Low pH	0.88
USNAMB: Urban land, Nassau substratum-----	45	Not rated		Not rated		Not rated	
Nassau-----	30	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Cobble content	0.05	Rock fragments	0.00
		Cobble content	0.85				
		Low pH	0.99				
Manlius-----	25	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Depth to bedrock	0.46	Cobble content	0.00	Depth to bedrock	0.46
		Organic matter content	0.50				
		Cobble content	0.67				
		Low pH	0.99				
USNAMC: Urban land, Nassau substratum-----	55	Not rated		Not rated		Not rated	
Nassau-----	25	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Cobble content	0.05	Rock fragments	0.00
		Cobble content	0.85			Slope	0.37
		Low pH	0.99				
Manlius-----	20	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Depth to bedrock	0.46	Cobble content	0.00	Slope	0.37
		Organic matter content	0.50			Depth to bedrock	0.46
		Cobble content	0.67				
		Low pH	0.99				

Table 25.—Source of Reclamation Material, Roadfill, and Topsoil—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
USNAMd: Urban land, Nassau substratum-----	60	Not rated		Not rated		Not rated	
Nassau-----	25	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.00	Cobble content	0.05	Depth to bedrock	0.00
		Cobble content	0.85	Slope	0.50	Rock fragments	0.00
		Low pH	0.99				
Manlius-----	15	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.46	Cobble content	0.00	Rock fragments	0.00
		Organic matter content	0.50	Slope	0.50	Depth to bedrock	0.46
		Cobble content	0.67				
		Low pH	0.99				
USWUSB: Urban land, Wurtsboro substratum-----	45	Not rated		Not rated		Not rated	
Wurtsboro-----	35	Fair		Fair		Fair	
		Organic matter content	0.12	Saturated zone	0.14	Saturated zone	0.14
		Low pH	0.50			Rock fragments	0.76
						Low pH	0.76
						Hard to reclaim (rock fragments)	0.88
Swartswood-----	20	Fair		Good		Poor	
		Organic matter content	0.12			Rock fragments	0.00
		Low pH	0.50			Hard to reclaim (rock fragments)	0.80
		Droughty	0.97			Low pH	0.88
VepBc: Venango, extremely stony-----	90	Fair		Poor		Poor	
		Organic matter content	0.08	Saturated zone	0.00	Saturated zone	0.00
		Low pH	0.50	Low strength	0.00	Clay content	0.49
		Clay content	0.83			Rock fragments	0.50
						Hard to reclaim (rock fragments)	0.80
						Low pH	0.95
VepCc: Venango, extremely stony-----	85	Fair		Poor		Poor	
		Organic matter content	0.08	Saturated zone	0.00	Saturated zone	0.00
		Low pH	0.50	Low strength	0.00	Slope	0.37
		Clay content	0.83			Clay content	0.49
						Rock fragments	0.50
						Hard to reclaim (rock fragments)	0.80
						Low pH	0.95

Table 25.—Source of Reclamation Material, Roadfill, and Topsoil—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
WaahAt: Wallkill, frequently flooded-----	90	Fair Low pH	0.20	Poor Saturated zone	0.00	Poor Saturated zone Organic matter content Low pH	0.00 0.00 0.76
WabBb: Wallpack, aeolian mantle, very stony-	85	Fair Organic matter content Low pH	0.03 0.50	Good		Fair Rock fragments Hard to reclaim (rock fragments) Low pH	0.76 0.97 0.98
WabCb: Wallpack, aeolian mantle, very stony-	85	Fair Organic matter content Low pH	0.03 0.50	Good		Fair Slope Rock fragments Hard to reclaim (rock fragments) Low pH	0.37 0.76 0.97 0.98
WabDb: Wallpack, aeolian mantle, very stony-	85	Fair Organic matter content Low pH	0.03 0.50	Poor Slope	0.00	Poor Slope Rock fragments Hard to reclaim (rock fragments) Low pH	0.00 0.76 0.97 0.98
WacB: Wallpack-----	85	Fair Organic matter content Low pH Water erosion	0.02 0.54 0.99	Good		Poor Hard to reclaim (rock fragments) Rock fragments	0.00 0.00
WacBc: Wallpack, extremely stony-----	85	Fair Organic matter content Low pH	0.02 0.54	Good		Fair Rock fragments	0.50
WacC: Wallpack-----	85	Fair Organic matter content Low pH Water erosion	0.02 0.54 0.99	Good		Poor Hard to reclaim (rock fragments) Rock fragments Slope	0.00 0.00 0.37



Table 25.—Source of Reclamation Material, Roadfill, and Topsoil—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material	Value	Potential source of roadfill	Value	Potential source of topsoil	Value
		Rating class and limiting features		Rating class and limiting features		Rating class and limiting features	
WacCc: Wallpack, extremely stony-----	85	Fair Organic matter content Low pH	0.02 0.54	Good		Fair Slope Rock fragments	0.37 0.50
WacD: Wallpack-----	85	Fair Organic matter content Low pH Water erosion	0.02 0.54 0.99	Fair Slope	0.50	Poor Slope Hard to reclaim (rock fragments) Rock fragments	0.00 0.00 0.00
WacDc: Wallpack, extremely stony-----	85	Fair Organic matter content Low pH	0.02 0.54	Poor Slope	0.00	Poor Slope Rock fragments	0.00 0.50
WATER: Water-----	100	Not rated		Not rated		Not rated	
WecBc: Wellsboro, extremely stony-----	85	Fair Organic matter content Low pH	0.02 0.50	Fair Saturated zone Cobble content	0.53 0.92	Fair Hard to reclaim (rock fragments) Rock fragments Saturated zone Low pH	0.12 0.18 0.53 0.95
WecCc: Wellsboro, extremely stony-----	85	Fair Organic matter content Low pH	0.02 0.50	Fair Saturated zone Cobble content	0.53 0.92	Fair Hard to reclaim (rock fragments) Rock fragments Slope Saturated zone Low pH	0.12 0.18 0.37 0.53 0.95
WumBc: Wurtsboro, extremely stony-----	85	Fair Organic matter content Low pH	0.12 0.50	Fair Saturated zone	0.14	Fair Saturated zone Rock fragments Low pH Hard to reclaim (rock fragments)	0.14 0.76 0.76 0.88

Table 25.—Source of Reclamation Material, Roadfill, and Topsoil—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material	Value	Potential source of roadfill	Value	Potential source of topsoil	Value
		Rating class and limiting features		Rating class and limiting features		Rating class and limiting features	
WusBc: Wurtsboro, extremely stony-----	60	Fair		Fair		Fair	
		Organic matter content	0.12	Saturated zone	0.14	Saturated zone	0.14
		Low pH	0.50			Rock fragments	0.76
						Low pH	0.76
						Hard to reclaim (rock fragments)	0.88
Swartswood, extremely stony----	40	Fair		Good		Poor	
		Organic matter content	0.12			Rock fragments	0.00
		Low pH	0.50			Hard to reclaim (rock fragments)	0.80
		Droughty	0.97			Low pH	0.88
WusCc: Wurtsboro, extremely stony-----	60	Fair		Fair		Fair	
		Organic matter content	0.12	Saturated zone	0.14	Saturated zone	0.14
		Low pH	0.50			Slope	0.37
						Rock fragments	0.76
						Low pH	0.76
						Hard to reclaim (rock fragments)	0.88
Swartswood, extremely stony----	40	Fair		Good		Poor	
		Organic matter content	0.12			Rock fragments	0.00
		Low pH	0.50			Slope	0.37
		Droughty	0.97			Hard to reclaim (rock fragments)	0.80
						Low pH	0.88
WusDc: Wurtsboro, extremely stony-----	80	Fair		Poor		Poor	
		Organic matter content	0.12	Slope	0.00	Slope	0.00
		Low pH	0.50	Saturated zone	0.14	Saturated zone	0.14
						Rock fragments	0.76
						Low pH	0.76
						Hard to reclaim (rock fragments)	0.88
Swartswood, extremely stony----	20	Fair		Poor		Poor	
		Organic matter content	0.12	Slope	0.00	Slope	0.00
		Low pH	0.50			Rock fragments	0.00
		Droughty	0.97			Hard to reclaim (rock fragments)	0.80
						Low pH	0.88

Table 26.--Ponds and Embankments

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
AhbBc: Alden, extremely stony-----	90	Somewhat limited Seepage	0.03	Very limited Ponding Saturated zone Piping	1.00 1.00 0.20	Somewhat limited Cutbanks cave	0.10
AhcBc: Alden, gneiss till substratum, extremely stony----	90	Somewhat limited Seepage	0.03	Very limited Ponding Saturated zone Piping Hard to compact	1.00 1.00 1.00 1.00	Somewhat limited Cutbanks cave	0.10
AruCh: Arnot, very rocky---	55	Very limited Depth to bedrock Slope	1.00 1.00	Very limited Seepage Thin layer	1.00 1.00	Very limited Depth to water	1.00
Lordstown, very rocky-----	40	Very limited Slope Seepage Depth to bedrock	1.00 0.70 0.66	Somewhat limited Thin layer Seepage	0.66 0.36	Very limited Depth to water	1.00
ArvD: Arnot-----	45	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Seepage Thin layer	1.00 1.00	Very limited Depth to water	1.00
Lordstown-----	40	Very limited Slope Seepage Depth to bedrock	1.00 0.70 0.66	Somewhat limited Thin layer Seepage	0.66 0.36	Very limited Depth to water	1.00
Rock outcrop-----	15	Not rated		Not rated		Not rated	
ArvE: Arnot-----	60	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Seepage Thin layer	1.00 1.00	Very limited Depth to water	1.00
Lordstown-----	25	Very limited Slope Seepage Depth to bedrock	1.00 0.70 0.66	Somewhat limited Thin layer Seepage	0.66 0.36	Very limited Depth to water	1.00
Rock outcrop-----	15	Not rated		Not rated		Not rated	

Table 26.—Ponds and Embankments—Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
AtcA: Atherton, very poorly drained-----	60	Very limited Seepage	1.00	Very limited Ponding Saturated zone Piping	1.00 1.00 0.87	Somewhat limited Cutbanks cave	0.10
Atherton, poorly drained-----	30	Somewhat limited Seepage	0.70	Very limited Saturated zone Piping	1.00 0.34	Somewhat limited Slow refill Cutbanks cave	0.30 0.10
CatbA: Catden-----	85	Somewhat limited Seepage	0.70	Very limited Organic matter content Ponding Saturated zone Seepage Hard to compact	1.00 1.00 1.00 1.00	Somewhat limited Cutbanks cave	0.10
ChkC: Chatfield-----	45	Very limited Seepage Slope Depth to bedrock	1.00 1.00 0.86	Somewhat limited Thin layer Seepage	0.86 0.04	Very limited Depth to water	1.00
Hollis-----	30	Very limited Depth to bedrock Slope	1.00 1.00	Very limited Thin layer Seepage	1.00 0.50	Very limited Depth to water	1.00
Rock outcrop-----	25	Not rated		Not rated		Not rated	
ChkE: Chatfield-----	45	Very limited Slope Seepage Depth to bedrock	1.00 1.00 0.86	Somewhat limited Thin layer Seepage	0.86 0.04	Very limited Depth to water	1.00
Hollis-----	30	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Thin layer Seepage	1.00 0.50	Very limited Depth to water	1.00
Rock outcrop-----	20	Not rated		Not rated		Not rated	
ChwBc: Chippewa, extremely stony-----	80	Not limited		Very limited Ponding Saturated zone Piping	1.00 1.00 0.96	Very limited Depth to water	1.00
CorA: Colonie-----	80	Very limited Seepage	1.00	Very limited Seepage	1.00	Very limited Depth to water	1.00
CorB: Colonie-----	80	Very limited Seepage Slope	1.00 0.68	Very limited Seepage	1.00	Very limited Depth to water	1.00

Table 26.—Ponds and Embankments—Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
DefAr: Delaware, rarely flooded-----	80	Very limited Seepage	1.00	Very limited Piping	1.00	Very limited Depth to water	1.00
DefBr: Delaware, rarely flooded-----	80	Very limited Seepage Slope	1.00 0.68	Very limited Piping	1.00	Very limited Depth to water	1.00
FaxC: Farmington-----	50	Very limited Depth to bedrock Slope	1.00 1.00	Very limited Thin layer Piping	1.00 1.00	Very limited Depth to water	1.00
Rock outcrop-----	40	Not rated		Not rated		Not rated	
FdwB: Farmington-----	40	Very limited Depth to bedrock Slope	1.00 0.08	Very limited Thin layer Piping	1.00 1.00	Very limited Depth to water	1.00
Wassaic-----	30	Somewhat limited Depth to bedrock Seepage Slope	0.91 0.70 0.08	Somewhat limited Thin layer	0.91	Very limited Depth to water	1.00
Rock outcrop-----	25	Not rated		Not rated		Not rated	
FmhAs: Fluvaquents, occasionally flooded-----	90	Very limited Seepage	1.00	Very limited Saturated zone Piping	1.00 1.00	Somewhat limited Cutbanks cave	0.10
FrdAb: Fredon, very stony--	45	Very limited Seepage	1.00	Very limited Saturated zone Seepage	1.00 1.00	Very limited Cutbanks cave	1.00
Halsey, very stony--	40	Very limited Seepage	1.00	Very limited Ponding Saturated zone Seepage	1.00 1.00 1.00	Very limited Cutbanks cave	1.00
GawEh: Galway, very rocky--	80	Very limited Slope Depth to bedrock Seepage	1.00 0.98 0.70	Somewhat limited Thin layer	0.98	Very limited Depth to water	1.00
HdxAb: Hazen, very stony---	50	Very limited Seepage	1.00	Very limited Seepage	1.00	Very limited Depth to water	1.00
Hoosic, very stony--	40	Very limited Seepage	1.00	Very limited Seepage	1.00	Very limited Depth to water	1.00

Table 26.—Ponds and Embankments—Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
HdxBb: Hazen, very stony---	60	Very limited Seepage Slope	1.00 0.68	Very limited Seepage	1.00	Very limited Depth to water	1.00
Hoosic, very stony--	35	Very limited Seepage Slope	1.00 0.68	Very limited Seepage	1.00	Very limited Depth to water	1.00
HhmBc: Hibernia, extremely stony-----	80	Very limited Seepage Slope	1.00 0.08	Very limited Saturated zone saturated zone	1.00	Very limited Depth to water	1.00
HkrgBb: Hinckley, very stony	85	Very limited Seepage Slope	1.00 0.68	Very limited Seepage Rock fragments	1.00 0.27	Very limited Depth to water	1.00
HkrgCb: Hinckley, very stony	85	Very limited Seepage Slope	1.00 1.00	Very limited Seepage Rock fragments	1.00 0.27	Very limited Depth to water	1.00
HncD: Hollis-----	45	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Thin layer Seepage	1.00 0.50	Very limited Depth to water	1.00
Rock outcrop-----	30	Not rated		Not rated		Not rated	
Chatfield-----	20	Very limited Slope Seepage Depth to bedrock	1.00 1.00 0.86	Somewhat limited Thin layer Seepage	0.86 0.04	Very limited Depth to water	1.00
HonCb: Hoosic, very stony--	60	Very limited Seepage Slope	1.00 1.00	Very limited Seepage	1.00	Very limited Depth to water	1.00
Hazen, very stony---	30	Very limited Seepage Slope	1.00 1.00	Very limited Seepage	1.00	Very limited Depth to water	1.00
HopEb: Hoosic, very stony--	50	Very limited Seepage Slope	1.00 1.00	Very limited Seepage	1.00	Very limited Depth to water	1.00
Otisville, very stony-----	40	Very limited Seepage Slope	1.00 1.00	Very limited Seepage	1.00	Very limited Depth to water	1.00

Table 26.—Ponds and Embankments—Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
LacBc: Lackawanna, extremely stony----	85	Somewhat limited Seepage Slope	0.70 0.08	Not limited		Very limited Depth to water	1.00
LacCc: Lackawanna, extremely stony----	85	Very limited Slope Seepage	1.00 0.70	Not limited		Very limited Depth to water	1.00
LacDc: Lackawanna, extremely stony----	85	Very limited Slope Seepage	1.00 0.70	Not limited		Very limited Depth to water	1.00
LorB: Lordstown-----	50	Somewhat limited Seepage Depth to bedrock Slope	0.70 0.66 0.08	Somewhat limited Thin layer Seepage	0.66 0.36	Very limited Depth to water	1.00
Wallpack-----	35	Somewhat limited Slope	0.08	Not limited		Very limited Depth to water	1.00
LorC: Lordstown-----	50	Very limited Slope Seepage Depth to bedrock	1.00 0.70 0.66	Somewhat limited Thin layer Seepage	0.66 0.36	Very limited Depth to water	1.00
Wallpack-----	35	Very limited Slope	1.00	Not limited		Very limited Depth to water	1.00
LorCh: Lordstown, very rocky-----	50	Very limited Slope Seepage Depth to bedrock	1.00 0.70 0.66	Somewhat limited Thin layer Seepage	0.66 0.36	Very limited Depth to water	1.00
Wallpack, very rocky	35	Very limited Slope	1.00	Somewhat limited Piping	0.96	Very limited Depth to water	1.00
LorD: Lordstown-----	50	Very limited Slope Seepage Depth to bedrock	1.00 0.70 0.66	Somewhat limited Thin layer Seepage	0.66 0.36	Very limited Depth to water	1.00
Wallpack-----	35	Very limited Slope	1.00	Not limited		Very limited Depth to water	1.00

Table 26.—Ponds and Embankments—Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
LorDh: Lordstown, very rocky-----	50	Very limited Slope Seepage Depth to bedrock	1.00 0.70 0.66	Somewhat limited Thin layer Seepage	0.66 0.36	Very limited Depth to water	1.00
Wallpack, very rocky	40	Very limited Slope	1.00	Somewhat limited Piping	0.96	Very limited Depth to water	1.00
MabEh: Manlius, very rocky-	60	Very limited Slope Seepage Depth to bedrock	1.00 1.00 0.93	Somewhat limited Thin layer Rock fragments	0.93 0.42	Very limited Depth to water	1.00
Nassau, very rocky--	25	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Thin layer Rock fragments Seepage	1.00 0.39 0.20	Very limited Depth to water	1.00
NauBh: Nassau, very rocky--	50	Very limited Depth to bedrock Slope	1.00 0.08	Very limited Thin layer Seepage Rock fragments	1.00 0.20 0.15	Very limited Depth to water	1.00
Manlius, very rocky-	45	Very limited Seepage Depth to bedrock Slope	1.00 0.88 0.08	Somewhat limited Thin layer Rock fragments	0.88 0.33	Very limited Depth to water	1.00
NauCh: Nassau, very rocky--	55	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Thin layer Seepage Rock fragments	1.00 0.20 0.15	Very limited Depth to water	1.00
Manlius, very rocky-	40	Very limited Slope Seepage Depth to bedrock	1.00 1.00 0.88	Somewhat limited Thin layer Rock fragments	0.88 0.33	Very limited Depth to water	1.00
NauDh: Nassau, very rocky--	50	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Thin layer Seepage Rock fragments	1.00 0.20 0.15	Very limited Depth to water	1.00
Manlius, very rocky-	40	Very limited Slope Seepage Depth to bedrock	1.00 1.00 0.88	Somewhat limited Thin layer Rock fragments	0.88 0.33	Very limited Depth to water	1.00
NavE: Nassau-----	50	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Thin layer Rock fragments Seepage	1.00 0.39 0.20	Very limited Depth to water	1.00



Table 26.—Ponds and Embankments—Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
NavE: (cont.)							
Rock outcrop-----	45	Not rated		Not rated		Not rated	
OpnCh:							
Oquaga, very rocky--	55	Very limited Slope Depth to bedrock Seepage	1.00 0.96 0.70	Somewhat limited Thin layer Rock fragments	0.96 0.01	Very limited Depth to water	1.00
Lackawanna, very rocky-----	30	Very limited Slope Seepage	1.00 0.70	Not limited		Very limited Depth to water	1.00
OpnDh:							
Oquaga, very rocky--	50	Very limited Slope Depth to bedrock Seepage	1.00 0.96 0.70	Somewhat limited Thin layer Rock fragments	0.96 0.01	Very limited Depth to water	1.00
Lackawanna, very rocky-----	35	Very limited Slope Seepage	1.00 0.70	Not limited		Very limited Depth to water	1.00
OprC:							
Oquaga-----	75	Very limited Slope Depth to bedrock Seepage	1.00 0.96 0.70	Somewhat limited Thin layer Rock fragments	0.96 0.01	Very limited Depth to water	1.00
Rock outcrop-----	15	Not rated		Not rated		Not rated	
OprE:							
Oquaga-----	60	Very limited Slope Depth to bedrock Seepage	1.00 0.96 0.70	Somewhat limited Thin layer Rock fragments	0.96 0.01	Very limited Depth to water	1.00
Rock outcrop-----	25	Not rated		Not rated		Not rated	
PHG:							
Pits, sand and gravel-----	95	Not rated		Not rated		Not rated	
PohA:							
Pompton-----	80	Very limited Seepage	1.00	Very limited Saturated zone Seepage	1.00 0.57	Very limited Cutbanks cave	1.00
QY:							
Pits, quarry-----	100	Not rated		Not rated		Not rated	
RkrB:							
Riverhead-----	85	Very limited Seepage Slope	1.00 0.32	Very limited Seepage Saturated zone	1.00 0.68	Very limited Cutbanks cave Saturated zone	1.00 0.14

Table 26.—Ponds and Embankments—Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
RnaF:							
Rock outcrop-----	40	Not rated		Not rated		Not rated	
Arnot-----	30	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Seepage Thin layer	1.00 1.00	Very limited Depth to water	1.00
Rubble land-----	20	Very limited Seepage Slope Not rated	1.00 1.00 1.00	Not rated		Very limited Depth to water	1.00
RnfC:							
Rock outcrop-----	40	Not rated		Not rated		Not rated	
Farmington-----	35	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Thin layer Piping	1.00 1.00	Very limited Depth to water	1.00
Galway-----	25	Very limited Slope Depth to bedrock Seepage	1.00 0.98 0.70	Somewhat limited Thin layer	0.98	Very limited Depth to water	1.00
RnFD:							
Rock outcrop-----	50	Not rated		Not rated		Not rated	
Farmington-----	40	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Thin layer Piping	1.00 1.00	Very limited Depth to water	1.00
Galway-----	10	Very limited Slope Depth to bedrock Seepage	1.00 0.98 0.70	Somewhat limited Thin layer	0.98	Very limited Depth to water	1.00
RoefBc:							
Rockaway, thin fragipan, extremely stony-----	85	Very limited Seepage Slope	1.00 0.08	Somewhat limited Seepage	0.03	Very limited Depth to water	1.00
RoefCc:							
Rockaway, thin fragipan, extremely stony-----	85	Very limited Slope Seepage	1.00 1.00	Somewhat limited Seepage	0.03	Very limited Depth to water	1.00
RoefDc:							
Rockaway, thin fragipan, extremely stony-----	85	Very limited Slope Seepage	1.00 1.00	Somewhat limited Seepage	0.03	Very limited Depth to water	1.00

Table 26.—Ponds and Embankments—Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
RokB:							
Rockaway, thin fragipan-----	50	Very limited Seepage Slope	1.00 0.08	Somewhat limited Seepage	0.03	Very limited Depth to water	1.00
Chatfield-----	30	Very limited Seepage Depth to bedrock Slope	1.00 0.86 0.08	Somewhat limited Thin layer Seepage	0.86 0.04	Very limited Depth to water	1.00
Rock outcrop-----	20	Not rated		Not rated		Not rated	
RokC:							
Rockaway, thin fragipan-----	45	Very limited Slope Seepage	1.00 1.00	Somewhat limited Seepage	0.03	Very limited Depth to water	1.00
Chatfield-----	40	Very limited Slope Seepage Depth to bedrock	1.00 1.00 0.86	Somewhat limited Thin layer Seepage	0.86 0.04	Very limited Depth to water	1.00
Rock outcrop-----	15	Not rated		Not rated		Not rated	
RokD:							
Rockaway, thin fragipan-----	45	Very limited Slope Seepage	1.00 1.00	Somewhat limited Seepage	0.03	Very limited Depth to water	1.00
Chatfield-----	25	Very limited Slope Seepage Depth to bedrock	1.00 1.00 0.86	Somewhat limited Thin layer Seepage	0.86 0.04	Very limited Depth to water	1.00
Rock outcrop-----	20	Not rated		Not rated		Not rated	
RooB:							
Rockaway, thin fragipan-----	50	Very limited Seepage Slope	1.00 0.08	Somewhat limited Seepage	0.03	Very limited Depth to water	1.00
Urban land, Rockaway thin fragipan substratum-----	40	Very limited Seepage	1.00	Somewhat limited Seepage	0.15	Very limited Depth to water	1.00
RooC:							
Rockaway, thin fragipan-----	45	Very limited Slope Seepage	1.00 1.00	Somewhat limited Seepage	0.03	Very limited Depth to water	1.00
Urban land, Rockaway thin fragipan substratum-----	40	Very limited Seepage	1.00	Somewhat limited Seepage	0.15	Very limited Depth to water	1.00

Table 26.—Ponds and Embankments—Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
RooD: Rockaway, thin fragipan-----	45	Very limited Slope Seepage	1.00 1.00	Somewhat limited Seepage	0.03	Very limited Depth to water	1.00
Urban land, Rockaway thin fragipan substratum-----	40	Very limited Seepage	1.00	Somewhat limited Seepage	0.15	Very limited Depth to water	1.00
ScoA: Scio-----	80	Somewhat limited Seepage	0.72	Very limited Saturated zone Piping	1.00 1.00	Somewhat limited Slow refill Cutbanks cave	0.28 0.10
SwfBc: Swartswood, extremely stony----	90	Very limited Seepage Slope	1.00 0.08	Somewhat limited Seepage	0.44	Very limited Depth to water	1.00
SwfCc: Swartswood, extremely stony----	90	Very limited Slope Seepage	1.00 1.00	Somewhat limited Seepage	0.44	Very limited Depth to water	1.00
SwfDc: Swartswood, extremely stony----	85	Very limited Slope Seepage	1.00 1.00	Somewhat limited Seepage	0.44	Very limited Depth to water	1.00
UccAs: Udifluvents, occasionally flooded-----	90	Very limited Seepage	1.00	Somewhat limited Saturated zone Seepage	0.18 0.08	Very limited Cutbanks cave Saturated zone	1.00 0.44
UdaB: Udorthents-----	100	Very limited Seepage Slope	1.00 0.08	Somewhat limited Seepage	0.58	Very limited Depth to water	1.00
UdauB: Udorthents-----	60	Very limited Seepage Slope	1.00 0.08	Somewhat limited Seepage	0.58	Very limited Depth to water	1.00
Urban land-----	40	Not rated		Not rated		Not rated	
UnfA: Unadilla-----	80	Very limited Seepage	1.00	Very limited Piping	1.00	Very limited Depth to water	1.00
UnfB: Unadilla-----	80	Very limited Seepage Slope	1.00 0.68	Very limited Piping	1.00	Very limited Depth to water	1.00

Table 26.—Ponds and Embankments—Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
USCHRB: Urban land, Chatfield substratum-----	40	Very limited Seepage Depth to bedrock	1.00 0.86	Somewhat limited Thin layer Seepage	0.86 0.32	Very limited Depth to water	1.00
Chatfield-----	25	Very limited Seepage Depth to bedrock Slope	1.00 0.86 0.08	Somewhat limited Thin layer Seepage	0.86 0.04	Very limited Depth to water	1.00
Rock outcrop-----	20	Not rated		Not rated		Not rated	
USCHRC: Urban land, Chatfield substratum-----	40	Very limited Seepage Depth to bedrock	1.00 0.86	Somewhat limited Thin layer Seepage	0.86 0.32	Very limited Depth to water	1.00
Chatfield-----	25	Very limited Slope Seepage Depth to bedrock	1.00 1.00 0.86	Somewhat limited Thin layer Seepage	0.86 0.04	Very limited Depth to water	1.00
Rock outcrop-----	20	Not rated		Not rated		Not rated	
USCHRD: Urban land, Chatfield substratum-----	40	Very limited Seepage Depth to bedrock	1.00 0.86	Somewhat limited Thin layer Seepage	0.86 0.32	Very limited Depth to water	1.00
Chatfield-----	25	Very limited Slope Seepage Depth to bedrock	1.00 1.00 0.86	Somewhat limited Thin layer Seepage	0.86 0.04	Very limited Depth to water	1.00
Rock outcrop-----	20	Not rated		Not rated		Not rated	
USFARC: Urban land, Farmington substratum-----	50	Very limited Depth to bedrock	1.00	Very limited Thin layer	1.00	Very limited Depth to water	1.00
Farmington-----	30	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Thin layer Piping	1.00 1.00	Very limited Depth to water	1.00
Rock outcrop-----	20	Not rated		Not rated		Not rated	
USFARD: Urban land, Farmington substratum-----	40	Very limited Depth to bedrock	1.00	Very limited Thin layer	1.00	Very limited Depth to water	1.00

Table 26.—Ponds and Embankments—Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
USFARD: (cont.)							
Farmington-----	35	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Thin layer Piping	1.00 1.00	Very limited Depth to water	1.00
Rock outcrop-----	25	Not rated		Not rated		Not rated	
USFAWB:							
Urban land, Farmington substratum-----	50	Very limited Depth to bedrock	1.00	Very limited Thin layer	1.00	Very limited Depth to water	1.00
Farmington-----	30	Very limited Depth to bedrock Slope	1.00 0.08	Very limited Thin layer Piping	1.00 1.00	Very limited Depth to water	1.00
Wassaic-----	20	Somewhat limited Depth to bedrock Seepage Slope	0.91 0.70 0.08	Somewhat limited Thin layer	0.91	Very limited Depth to water	1.00
USHAZA:							
Urban land, Hazen substratum-----	45	Very limited Seepage	1.00	Very limited Seepage	1.00	Very limited Depth to water	1.00
Hazen-----	35	Very limited Seepage	1.00	Very limited Seepage	1.00	Very limited Depth to water	1.00
Hoosic-----	20	Very limited Seepage	1.00	Very limited Seepage	1.00	Very limited Depth to water	1.00
USHAZB:							
Urban land, Hazen substratum-----	55	Very limited Seepage	1.00	Very limited Seepage	1.00	Very limited Depth to water	1.00
Hazen-----	25	Very limited Seepage Slope	1.00 0.68	Very limited Seepage	1.00	Very limited Depth to water	1.00
Hoosic-----	20	Very limited Seepage Slope	1.00 0.68	Very limited Seepage	1.00	Very limited Depth to water	1.00
USNAMB:							
Urban land, Nassau substratum-----	45	Very limited Depth to bedrock	1.00	Very limited Seepage Thin layer	1.00 1.00	Very limited Depth to water	1.00
Nassau-----	30	Very limited Depth to bedrock Slope	1.00 0.08	Very limited Thin layer Seepage Rock fragments	1.00 0.20 0.15	Very limited Depth to water	1.00
Manlius-----	25	Very limited Seepage Depth to bedrock Slope	1.00 0.88 0.08	Somewhat limited Thin layer Rock fragments	0.88 0.33	Very limited Depth to water	1.00

Table 26.—Ponds and Embankments—Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
USNAMC: Urban land, Nassau substratum-----	55	Very limited Depth to bedrock	1.00	Very limited Seepage Thin layer	1.00 1.00	Very limited Depth to water	1.00
Nassau-----	25	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Thin layer Seepage Rock fragments	1.00 0.20 0.15	Very limited Depth to water	1.00
Manlius-----	20	Very limited Slope Seepage Depth to bedrock	1.00 1.00 0.88	Somewhat limited Thin layer Rock fragments	0.88 0.33	Very limited Depth to water	1.00
USNAMD: Urban land, Nassau substratum-----	60	Very limited Depth to bedrock	1.00	Very limited Seepage Thin layer	1.00 1.00	Very limited Depth to water	1.00
Nassau-----	25	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Thin layer Seepage Rock fragments	1.00 0.20 0.15	Very limited Depth to water	1.00
Manlius-----	15	Very limited Slope Seepage Depth to bedrock	1.00 1.00 0.88	Somewhat limited Thin layer Rock fragments	0.88 0.33	Very limited Depth to water	1.00
USWUSB: Urban land, Wurtsboro substratum-----	45	Very limited Seepage	1.00	Very limited Saturated zone Seepage	1.00 0.47	Very limited Depth to water	1.00
Wurtsboro-----	35	Very limited Seepage Slope	1.00 0.08	Very limited Saturated zone Seepage	1.00 0.37	Very limited Depth to water	1.00
Swartswood-----	20	Very limited Seepage Slope	1.00 0.08	Somewhat limited Seepage	0.44	Very limited Depth to water	1.00
VepBc: Venango, extremely stony-----	90	Somewhat limited Slope	0.08	Very limited Saturated zone	1.00	Very limited Depth to water	1.00
VepCc: Venango, extremely stony-----	85	Very limited Slope	1.00	Very limited Saturated zone	1.00	Very limited Depth to water	1.00

Table 26.—Ponds and Embankments—Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
WaahAt: Wallkill, frequently flooded-----	90	Very limited Seepage	1.00	Very limited Organic matter content Ponding Saturated zone Seepage Piping	1.00 1.00 1.00 1.00 1.00	Somewhat limited Cutbanks cave	0.10
WabBb: Wallpack, aeolian mantle, very stony-	85	Somewhat limited Seepage Slope	0.70 0.08	Not limited		Very limited Depth to water	1.00
WabCb: Wallpack, aeolian mantle, very stony-	85	Very limited Slope Seepage	1.00 0.70	Not limited		Very limited Depth to water	1.00
WabDb: Wallpack, aeolian mantle, very stony-	85	Very limited Slope Seepage	1.00 0.70	Not limited		Very limited Depth to water	1.00
WacB: Wallpack-----	85	Somewhat limited Slope	0.08	Not limited		Very limited Depth to water	1.00
WacBc: Wallpack, extremely stony-----	85	Somewhat limited Slope	0.08	Somewhat limited Piping	0.96	Very limited Depth to water	1.00
WacC: Wallpack-----	85	Very limited Slope	1.00	Not limited		Very limited Depth to water	1.00
WacCc: Wallpack, extremely stony-----	85	Very limited Slope	1.00	Somewhat limited Piping	0.96	Very limited Depth to water	1.00
WacD: Wallpack-----	85	Very limited Slope	1.00	Not limited		Very limited Depth to water	1.00
WacDc: Wallpack, extremely stony-----	85	Very limited Slope	1.00	Somewhat limited Piping	0.96	Very limited Depth to water	1.00
WATER: Water-----	100	Not rated		Not rated		Not rated	



Table 26.—Ponds and Embankments—Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
WecBc: Wellsboro, extremely stony-----	85	Somewhat limited Seepage Slope	0.70 0.08	Somewhat limited Saturated zone	0.99	Very limited Depth to water	1.00
WecCc: Wellsboro, extremely stony-----	85	Very limited Slope Seepage	1.00 0.70	Somewhat limited Saturated zone	0.99	Very limited Depth to water	1.00
WumBc: Wurtsboro, extremely stony-----	85	Very limited Seepage Slope	1.00 0.08	Very limited Saturated zone Seepage	1.00 0.37	Very limited Depth to water	1.00
WusBc: Wurtsboro, extremely stony-----	60	Very limited Seepage Slope	1.00 0.08	Very limited Saturated zone Seepage	1.00 0.37	Very limited Depth to water	1.00
Swartswood, extremely stony----	40	Very limited Seepage Slope	1.00 0.08	Somewhat limited Seepage	0.44	Very limited Depth to water	1.00
WusCc: Wurtsboro, extremely stony-----	60	Very limited Slope Seepage	1.00 1.00	Very limited Saturated zone Seepage	1.00 0.37	Very limited Depth to water	1.00
Swartswood, extremely stony----	40	Very limited Slope Seepage	1.00 1.00	Somewhat limited Seepage	0.44	Very limited Depth to water	1.00
WusDc: Wurtsboro, extremely stony-----	80	Very limited Slope Seepage	1.00 1.00	Very limited Saturated zone Seepage	1.00 0.37	Very limited Depth to water	1.00
Swartswood, extremely stony----	20	Very limited Slope Seepage	1.00 1.00	Somewhat limited Seepage	0.44	Very limited Depth to water	1.00

Table 27.—Engineering Properties

(Absence of an entry indicates that the data were not estimated.)

Map symbol and soil name	Depth	USDA texture	Classification		Fragments			Percentage passing sieve number--		
			Unified	AASHTO	>10 inches	3-10 inches	Pct	4	10	40
AhhBc: Alden, extremely stony-----	In						Pct			
	0-2	Slightly decomposed plant material	PT	A-8		0	0	100	100	100
	2-7	Silt loam	ML, OH	A-6, A-7-5		0	0	100	75-100	69-95
	7-14	Silt loam, very fine sandy loam, loam, silty clay loam	ML, CL	A-4, A-7-6, A-6		0	0	79-100	79-100	64-100
	14-28	Silty clay loam, loam, very fine sandy loam, silt loam	ML, CL	A-7-6, A-4		0	0	80-100	80-100	69-100
	28-43	Loam, silty clay loam, very fine sandy loam, silt loam	CL, SM	A-4, A-7-6, A-6		0	0	79-100	79-100	61-100
AhhC: Alden, gneiss till substratum, extremely stony	43-60	Silt loam, loam, silty clay loam, fine sandy loam	CL, GC-GM	A-6, A-7-6, A-2-4		0	0	56-93	56-93	45-93
	0-1	Slightly decomposed plant material	PT	A-8		0	0	100	100	100
	1-9	Mucky silt loam	OH, OL	A-7-5		0	0	100	73-100	66-95
	9-23	Silty clay loam, silt loam, very fine sandy loam, loam	ML, CL	A-7-6, A-4		0	0	100	78-100	67-100
AruCh: Arnot, very rocky-----	23-35	Silty clay loam, silt loam, very fine sandy loam, loam	ML, CL	A-7-6, A-4		0	0	100	78-100	67-100
	35-60	Silty clay loam, silt loam, loam, fine sandy loam	CL, GC-GM	A-4, A-7-6, A-6		0	0	52-92	52-92	44-92
	0-1	Slightly decomposed plant material	PT	A-8		0	0	100	100	100
	1-2	Loam	ML, CL-ML	A-6, A-4		0	0	100	100	83-90
	2-3	Fine sandy loam	SC-SM, CL, SM	A-6, A-4		0	0	100	100	80-93
	3-4	Fine sandy loam	SC-SM, CL, SM	A-6, A-1-b, A-4		0	0	100	59-100	48-93

Table 27.--Engineering Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40		
AruCh: (cont.) Arnot, very rocky-----	In										
	4-12	Very gravelly loam, silt loam	GC, GP-GC, CL	A-2-4, A-6, A-1-a	0	0			14-100	14-100	11-93
	12-17	Extremely gravelly loam, silt loam	GP-GC, GC, CL	A-2-4, A-6, A-1-a	0	0			14-100	14-100	11-93
	>17	Bedrock			---	---			---	---	---
	0-1	Slightly decomposed plant material	PT	A-8	0	0			100	100	100
	1-2	Loam	ML, SC-SM, CL	A-4, A-7-5	0	0			100	82-100	68-90
Lordstown, very rocky-----	2-3	Fine sandy loam	SC-SM, CL, SM	A-6, A-4	0	0			100	100	80-93
	3-5	Loam, silt loam	CL, GC-GM	A-6, A-4, A- 2-4	0	0			47-100	47-100	38-93
	5-17	Gravelly loam, silt loam	GC, GW, CL	A-4, A-1-a, A-6	0	0			4-100	4-100	3-93
	17-22	Gravelly loam, silt loam	GC, GW, CL	A-4, A-6, A- 1-a	0	0			4-100	4-100	3-93
	22-36	Very gravelly fine sandy loam, loam, silt loam	GC-GM, CL, GW	A-1-a, A-2-4, A-6	0	0			4-100	4-100	3-98
	>36	Bedrock			---	---			---	---	---
	0-1	Slightly decomposed plant material	PT	A-8	0	0			100	100	100
	1-2	Loam	ML, CL-ML	A-6, A-4	0	0			100	100	83-90
	2-3	Fine sandy loam	SC-SM, CL, SM	A-6, A-4	0	0			100	100	80-93
	3-4	Fine sandy loam	SC-SM, CL, SM	A-6, A-1-b, A-4	0	0			100	59-100	48-93
ArvD: Arnot-----	4-12	Very gravelly loam, silt loam	GC, GP-GC, CL	A-2-4, A-6, A-1-a	0	0			14-100	14-100	11-93
	12-17	Extremely gravelly loam, silt loam	GP-GC, GC, CL	A-1-a, A-2-4, A-6	0	0			14-100	14-100	11-93
	>17	Bedrock			---	---			---	---	---
	0-1	Slightly decomposed plant material	PT	A-8	0	0			100	100	100
	1-2	Loam	ML, SC-SM, CL	A-4, A-7-5	0	0			100	82-100	68-90
	2-3	Fine sandy loam	SC-SM, CL, SM	A-6, A-4	0	0			100	100	80-93
Lordstown-----	3-5	Loam, silt loam	CL, GC-GM	A-6, A-4, A- 2-4	0	0			47-100	47-100	38-93
	5-17	Gravelly loam, silt loam	GC, GW, CL	A-4, A-1-a, A-6	0	0			4-100	4-100	3-93
	17-22	Gravelly loam, silt loam	GC, GW, CL	A-4, A-6, A- 1-a	0	0			4-100	4-100	3-93
	22-36	Very gravelly fine sandy loam, loam, silt loam	GC-GM, CL, GW	A-1-a, A-2-4, A-6	0	0			4-100	4-100	3-98
	>36	Bedrock			---	---			---	---	---
	0-1	Slightly decomposed plant material	PT	A-8	0	0			100	100	100
	1-2	Loam	ML, SC-SM, CL	A-4, A-7-5	0	0			100	82-100	68-90
	2-3	Fine sandy loam	SC-SM, CL, SM	A-6, A-4	0	0			100	100	80-93
	3-5	Loam, silt loam	CL, GC-GM	A-6, A-4, A- 2-4	0	0			47-100	47-100	38-93
	5-17	Gravelly loam, silt loam	GC, GW, CL	A-4, A-1-a, A-6	0	0			4-100	4-100	3-93

Table 27.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--			
			Unified	AASHTO	>10	3-10	4	10	40	
					inches					
In						Pct	Pct			
ArvD: (cont.)										
Rock outcrop----	---	Bedrock				---	---	---	---	---
ArvE:										
Arnot-----	0-1	Slightly decomposed plant material	PT	A-8		0	0	100	100	100
	1-2	Loam	ML, CL-ML	A-4, A-6		0	0	100	100	83-90
	2-3	Fine sandy loam	SC-SM, CL, SM	A-6, A-4		0	0	100	100	80-93
	3-4	Fine sandy loam	SC-SM, CL, SM	A-6, A-1-b, A-4		0	0	100	100	59-100 48-93
	4-12	Very gravelly loam, silt loam	GC, GP-GC, CL	A-2-4, A-6, A-1-a		0	0	14-100	14-100	11-93
	12-17	Extremely gravelly loam, silt loam	GP-GC, GC, CL	A-1-a, A-2-4, A-6		0	0	14-100	14-100	11-93
	>17	Bedrock				---	---	---	---	---
Lordstown-----										
	0-1	Slightly decomposed plant material	PT	A-8		0	0	100	100	100
	1-2	Loam	ML, SC-SM, CL	A-4, A-7-5		0	0	100	82-100	68-90
	2-3	Fine sandy loam	SC-SM, CL, SM	A-6, A-4		0	0	100	100	80-93
	3-5	Loam, silt loam	CL, GC-GM	A-6, A-4, A- 2-4		0	0	47-100	47-100	38-93
	5-17	Gravelly loam, silt loam	GC, GW, CL	A-4, A-1-a, A-6		0	0	4-100	4-100	3-93
	17-22	Gravelly loam, silt loam	GC, GW, CL	A-4, A-6, A- 1-a		0	0	4-100	4-100	3-93
	22-36	Very gravelly fine sandy loam, loam, silt loam	GC-GM, CL, GW	A-1-a, A-2-4, A-6		0	0	4-100	4-100	3-98
	>36	Bedrock				---	---	---	---	---
Rock outcrop----	---	Bedrock				---	---	---	---	---
AtcA:										
Atherton, very poorly drained-	0-2	Slightly decomposed plant material	PT	A-8		0	0	100	100	100
	2-4	Moderately decomposed plant material	PT	A-8		0	0	100	100	100
	4-8	Mucky silt loam	OH	A-7-5		0	0	100	75-100	70-96
	8-10	Silty clay loam, very fine sandy loam, fine sandy loam, loam, silt loam	CL, SM, MH	A-4, A-6, A- 7-5		0	0	100	76-100	61-100



Table 27.--Engineering Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--		
			Unified	AASHTO	>10 inches Pct	3-10 inches Pct	4	10	40
AtcA: (cont.) Atherton, poorly drained-----	In								
	30-40	Silt loam, silty clay loam, very fine sandy loam, fine sandy loam, loam, sandy clay loam	CL, SC-SM	A-6, A-2-4, A-7-6	0	0	100	77-100	62-100
	40-60	Silt loam, silty clay loam, very fine sandy loam, fine sandy loam, loam, sandy clay loam	CL, SC-SM	A-6, A-2-4, A-7-6	0	0	100	77-100	62-100
CatbA: Catden-----	0-2	Mucky peat	PT	A-8	0	0	100	100	100
	2-13	Muck	PT	A-8	0	0	100	100	100
	13-20	Woody muck	PT	A-8	0	0	100	100	100
	20-32	Muck	PT	A-8	0	0	100	100	100
ChkC: Chatfield-----	32-60	Muck	PT	A-8	0	0	100	100	100
	0-1	Slightly decomposed plant material	PT	A-8	0	0	100	100	100
	1-3	Highly decomposed plant material	PT	A-8	0	0	100	100	100
	3-5	Cobbly loam	SC-SM, ML	A-4	0-7	11-31	75-95	75-95	62-86
Hollis-----	5-10	Silt loam, sandy loam, cobbly loam	SC-SM, CL	A-4, A-6	0-5	9-26	80-96	80-96	62-94
	10-24	Loam, silt loam, cobbly sandy loam	SC-SM, CL	A-2-4, A-6, A-1-b	0-5	4-25	69-91	69-91	47-80
	24-30	Loam, loamy sand, silt loam, cobbly sandy loam	SC-SM, CL, SM	A-1-b, A-2-4, A-6	0-5	4-25	63-91	63-91	40-85
	>30	Bedrock			---	---	---	---	---
Rock outcrop-----	0-1	Slightly decomposed plant material	PT	A-8	0	0	100	100	100
	1-3	Highly decomposed plant material	PT	A-8	0	0	100	100	100
	3-6	Cobbly loam	GC-GM, SM, ML	A-4	0-7	5-30	65-95	65-95	54-86
	6-8	Fine sandy loam, sandy loam, cobbly loam	CL, SC-SM	A-4, A-2-4	0-5	4-24	71-96	71-96	56-91
Rock outcrop-----	8-16	Fine sandy loam, loam, gravelly sandy loam	SC-SM, GC-GM	A-2-4, A-4, A-1-b	0-5	4-25	55-96	55-96	38-82
	>16	Bedrock			---	---	---	---	---
	---	Bedrock			---	---	---	---	---
	---	Bedrock			---	---	---	---	---

Table 27.—Engineering Properties—Continued

[illegible]















Table 27.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--					
			Unified	AASHTO	>10 inches	3-10 inches		4	10	40		
						Pct	Pct					
HhmBc: Hibernia, extremely stony	In											
	0-2	Slightly decomposed plant material	PT	A-8		0	0	100	100	100		
	2-4	Loam	CL-ML, ML	A-4		0	0-5	189-100	189-100	74-90	15	
	4-11	Sandy loam, loam	CL, SC-SM	A-4		0	0-5	91-100	91-100	71-95	4	
	11-19	Sandy loam, loam	CL, SC-SM	A-4, A-2-4		0	0-5	69-100	69-100	54-95	3	
	19-29	Sandy loam, gravelly loam	CL, SC, SC-SM	A-4		0	0-5	78-92	78-92	61-88	3	
	29-35	Sandy loam, loamy sand, loam, very cobbly silty clay loam	CL, GM	A-6, A-7-6, A-2-4		0	0-32	47-100	47-100	39-100	3	
	35-60	Silty clay loam, loamy sand, loam, extremely gravelly sandy loam	CL, GW-GM, GW-GC	A-1-a, A-7-6		0	0-32	44-100	25-90	16-88		
HkrgBb: Hinckley, very stony-----	0-1	Slightly decomposed plant material	PT	A-8		0	0	100	100	100		
	1-3	Loamy coarse sand	SM, GP-GM	A-1-b, A-1-a, A-2-4		0	0	46-96	46-96	25-54		
	3-9	Loamy sand, extremely cobbly loamy coarse sand, sandy loam	GP-GM, GW, SM	A-1-a, A-2-4		0	0-45	5-82	5-82	3-57		
	9-19	Sand, extremely cobbly loamy coarse sand, loamy sand	GP-GM, GW, SM	A-1-a, A-2-4		0	0-45	5-82	5-82	2-57		
	19-60	Stratified extremely gravelly coarse sand, stratified loamy coarse sand, stratified sand, stratified loamy sand	GP, GW, SP-SM	A-1-a, A-1-b		0	0-45	5-68	5-68	2-42		
	0-1	Slightly decomposed plant material	PT	A-8		0	0	100	100	100		
	1-3	Loamy coarse sand	SM, GP-GM	A-1-b, A-1-a, A-2-4		0	0	46-96	46-96	25-54		
	3-9	Loamy sand, extremely cobbly loamy coarse sand, sandy loam	GP-GM, GW, SM	A-1-a, A-2-4		0	0-45	5-82	5-82	3-57		
HkrgCb: Hinckley, very stony-----	0-1	Slightly decomposed plant material	PT	A-8		0	0	100	100	100		
	1-3	Loamy coarse sand	SM, GP-GM	A-1-b, A-1-a, A-2-4		0	0	46-96	46-96	25-54		
	3-9	Loamy sand, extremely cobbly loamy coarse sand, sandy loam	GP-GM, GW, SM	A-1-a, A-2-4		0	0-45	5-82	5-82	3-57		









Table 27.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
LacBc: Lackawanna, extremely stony	In				Pct	Pct			
	0-2	Slightly decomposed plant material	PT	A-8	0	0	100	100	100
	2-3	Cobbly fine sandy loam	ML, GM	A-4, A-2-4	5-23	13-23	59-100	59-100	48-100
	3-7	Cobbly fine sandy loam	CL-ML, SM,	CL/A-4, A-2-4, A-6	3-23	3-23	77-96	77-96	63-96
	7-8	Cobbly fine sandy loam	ML, GM	A-4, A-1-b	3-23	3-30	56-96	56-96	46-96
	8-16	Stony loam, silt loam, fine sandy loam	CL-ML, GM,	CL/A-4, A-2-4, A-6	3-23	3-30	56-96	56-96	43-96
	16-24	Stony loam, silt loam, fine sandy loam	CL-ML, GM,	CL/A-4, A-2-4, A-6	3-23	3-30	56-96	56-96	43-96
	24-29	Stony fine sandy loam, silt loam, loam, sandy loam	SC-SM, SM,	CL/A-4, A-2-4, A-6	2-17	2-22	66-98	66-98	51-98
LacCc: Lackawanna, extremely stony	29-60	Sandy loam, very cobbly fine sandy loam, silt loam, loam	GC-GM, SM,	CL/A-4, A-2-4, A-6	2-17	2-22	66-98	66-98	51-98
	0-2	Slightly decomposed plant material	PT	A-8	0	0	100	100	100
	2-3	Cobbly fine sandy loam	ML, GM	A-4, A-2-4	5-23	13-23	59-100	59-100	48-100
	3-7	Cobbly fine sandy loam	CL-ML, SM,	CL/A-4, A-2-4, A-6	3-23	3-23	77-96	77-96	63-96
	7-8	Cobbly fine sandy loam	ML, GM	A-4, A-1-b	3-23	3-30	56-96	56-96	46-96
	8-16	Stony loam, silt loam, fine sandy loam	CL-ML, GM,	CL/A-4, A-2-4, A-6	3-23	3-30	56-96	56-96	43-96
	16-24	Stony loam, silt loam, fine sandy loam	CL-ML, GM,	CL/A-4, A-2-4, A-6	3-23	3-30	56-96	56-96	43-96
LacDc: Lackawanna, extremely stony	24-29	Stony fine sandy loam, silt loam, loam, sandy loam	SC-SM, SM,	CL/A-4, A-2-4, A-6	2-17	2-22	66-98	66-98	51-98
	29-60	Sandy loam, very cobbly fine sandy loam, silt loam, loam	GC-GM, SM,	CL/A-2-4, A-4, A-6	2-17	2-22	66-98	66-98	51-98
	0-2	Slightly decomposed plant material	PT	A-8	0	0	100	100	100
	2-3	Cobbly fine sandy loam	ML, GM	A-4, A-2-4	5-23	13-23	59-100	59-100	48-100
	3-7	Cobbly fine sandy loam	CL-ML, SM,	CL/A-4, A-2-4, A-6	3-23	3-23	77-96	77-96	63-96
	7-8	Cobbly fine sandy loam	ML, GM	A-4, A-1-b	3-23	3-30	56-96	56-96	46-96
	8-16	Stony loam, silt loam, fine sandy loam	CL-ML, GM,	CL/A-4, A-2-4, A-6	3-23	3-30	56-96	56-96	43-96
	16-24	Stony loam, silt loam, fine sandy loam	CL-ML, GM,	CL/A-4, A-2-4, A-6	3-23	3-30	56-96	56-96	43-96



Table 27.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments	Percentage passing sieve number--			
						>10 inches			
			Unified	AASHTO			Pct	Pct	
LorC: (cont.) Lordstown-----	In								
	5-17	Gravelly loam, silt loam	GC, GW, CL	A-4, A-1-a, A-6	0	0	4-100	4-100	3-93
	17-22	Gravelly loam, silt loam	GC, GW, CL	A-4, A-6, A-1-a	0	0	4-100	4-100	3-93
	22-36	Very gravelly fine sandy loam, loam, silt loam	GC-GM, CL, GW	A-1-a, A-2-4, A-6	0	0	4-100	4-100	3-98
	>36	Bedrock			---	---	---	---	---
Wallpack-----	0-3	Silt loam	CL, GC	A-2-4, A-6, A-4	0	0	35-100	35-100	31-96
	3-9	Gravelly silt loam	CL, GC	A-2-4, A-6, A-4	0	0	35-100	35-100	31-95
	9-16	Loam, gravelly silt loam, fine sandy loam, sandy loam	GM, CL	A-6, A-1-b	0	0	39-100	39-100	30-100
	16-25	Gravelly silt loam, loam, fine sandy loam, sandy loam	CL, SM	A-6, A-1-b	0	0	71-100	41-100	32-100
	25-65	Fine sandy loam, very gravelly silt loam, loam, sandy loam	SC, SP, CL	A-1-a, A-6	0	0	53-100	7-100	5-100
LorCh: Lordstown, very rocky-----	0-1	Slightly decomposed plant material	PT	A-8	0	0	100	100	100
	1-2	Loam	ML, SC-SM, CL	A-4, A-7-5	0	0	100	82-100	68-90
	2-3	Fine sandy loam	SC-SM, CL, SM	A-6, A-4	0	0	100	100	180-93
	3-5	Loam, silt loam	CL, GC-GM	A-6, A-4, A-2-4	0	0	47-100	47-100	38-93
	5-17	Gravelly loam, silt loam	GC, GW, CL	A-4, A-1-a, A-6	0	0	4-100	4-100	3-93
Wallpack, very rocky-----	17-22	Gravelly loam, silt loam	GC, GW, CL	A-4, A-6, A-1-a	0	0	4-100	4-100	3-93
	22-36	Very gravelly fine sandy loam, loam, silt loam	GC-GM, CL, GW	A-1-a, A-2-4, A-6	0	0	4-100	4-100	3-98
	>36	Bedrock			---	---	---	---	---
	0-1	Slightly decomposed plant material	PT	A-8	0	0	100	100	100
	1-2	Gravelly silt loam	OH, SC	A-4, A-5	0	0	100	61-91	155-89
	2-5	Gravelly silt loam, loam, sandy loam, fine sandy loam	CL, GC-GM	A-4, A-6	0	0	63-91	63-91	151-91



Table 27.-Engineering Properties-Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
LorDh: Lordstown, very rocky-----	In				Pct	Pct			
	0-1	Slightly decomposed plant material	PT	A-8	0	0	100	100	100
	1-2	Loam	ML, SC-SM, CL	A-4, A-7-5	0	0	100	82-100	68-90
	2-3	Fine sandy loam	SC-SM, CL, SM	A-6, A-4	0	0	100	100	80-93
	3-5	Loam, silt loam	CL, GC-GM	A-6, A-4, A-2-4	0	0	47-100	47-100	38-93
	5-17	Gravelly loam, silt loam	GC, GW, CL	A-4, A-1-a, A-6	0	0	4-100	4-100	3-93
	17-22	Gravelly loam, silt loam	GC, GW, CL	A-4, A-6, A-1-a	0	0	4-100	4-100	3-93
	22-36	Very gravelly fine sandy loam, loam, silt loam	GC-GM, CL, GW	A-1-a, A-2-4, A-6	0	0	4-100	4-100	3-98
	>36	Bedrock			---	---	---	---	---
	0-1	Slightly decomposed plant material	PT	A-8	0	0	100	100	100
Wallpack, very rocky-----	1-2	Gravelly silt loam	OH, SC	A-5, A-4	0	0	100	61-91	55-89
	2-5	Gravelly silt loam, loam, sandy loam, fine sandy loam	CL, GC-GM	A-6, A-4	0	0	63-91	63-91	51-91
	5-18	Loam, gravelly silt loam, fine sandy loam, sandy loam	GC-GM, CL	A-4, A-6	0	0	64-92	64-92	52-92
	18-24	Silt loam, gravelly loam, fine sandy loam, sandy loam	GC, GC-GM, CL	A-6, A-1-b	0	0	45-79	45-79	36-79
	24-42	Gravelly silt loam, loam, fine sandy loam, sandy loam	CL, GC-GM	A-6, A-2-4	0	0	46-80	46-80	36-80
	42-60	Silt loam, gravelly loam, fine sandy loam, sandy loam	CL, GC-GM	A-6, A-1-b	0	0	45-79	45-79	36-79
	0-1	Slightly decomposed plant material	PT	A-8	0	0	100	100	100
	1-2	Very channery silt loam	ML, GC	A-4	0	8-32	53-91	52-91	46-87
	2-18	Extremely channery silt loam, loam	GC-GM, GC, CL	A-1-b, A-2-4, A-4	0	18-40	35-79	34-78	29-76
	18-27	Extremely channery silt loam, loam	GC-GM, GC	A-2-4, A-1-b, A-4	0	31-39	37-57	35-56	30-55
	>27	Bedrock			---	---	---	---	---
MabEh: Manlius, very rocky-----	0-1	Slightly decomposed plant material	PT	A-8	0	0	100	100	100
	1-2	Very channery silt loam	ML, GC	A-4	0	8-32	53-91	52-91	46-87
	2-18	Extremely channery silt loam, loam	GC-GM, GC, CL	A-1-b, A-2-4, A-4	0	18-40	35-79	34-78	29-76
	18-27	Extremely channery silt loam, loam	GC-GM, GC	A-2-4, A-1-b, A-4	0	31-39	37-57	35-56	30-55
	>27	Bedrock			---	---	---	---	---
	0-1	Slightly decomposed plant material	PT	A-8	0	0	100	100	100
	1-2	Very channery silt loam	ML, GC	A-4	0	8-32	53-91	52-91	46-87
	2-18	Extremely channery silt loam, loam	GC-GM, GC, CL	A-1-b, A-2-4, A-4	0	18-40	35-79	34-78	29-76
	18-27	Extremely channery silt loam, loam	GC-GM, GC	A-2-4, A-1-b, A-4	0	31-39	37-57	35-56	30-55
	>27	Bedrock			---	---	---	---	---

Table 27.--Engineering Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
MabEh: (cont.) Nassau, very rocky-----	In				Pct	Pct			
	0-1	Slightly decomposed plant material	PT	A-8	0	0	100	100	100
	1-2	Very channery silt loam	GC, CL, ML	A-4	0	0-32	53-100	52-100	46-96
	2-15	Extremely channery silt loam, loam	GC, CL, GC-GM	A-2-4, A-1-b, A-4	0	18-40	35-79	34-78	29-76
	>15	Bedrock			---	---	---	---	---
NauBh: Nassau, very rocky-----	0-7	Very channery silt loam	GC, CL, ML	A-4	0	0-32	53-100	52-100	46-96
	7-13	Extremely channery silt loam, loam	GC, GC-GM, CL	A-2-4, A-1-b, A-4	0	18-40	35-79	34-78	29-76
	>13	Bedrock			---	---	---	---	---
	0-9	Very channery silt loam	ML, GC	A-4	0	8-32	53-91	52-91	46-87
	9-20	Extremely channery silt loam, loam	GC, GC-GM, CL	A-1-b, A-2-4, A-4	0	18-40	35-79	34-78	29-76
Manlius, very rocky-----	20-29	Extremely channery silt loam, loam	GC, GC-GM	A-2-4, A-1-b, A-4	0	31-39	37-57	35-56	30-55
	>29	Bedrock			---	---	---	---	---
	0-7	Very channery silt loam	GC, CL, ML	A-4	0	0-32	53-100	52-100	46-96
	7-13	Extremely channery silt loam, loam	GC, GC-GM, CL	A-2-4, A-1-b, A-4	0	18-40	35-79	34-78	29-76
	>13	Bedrock			---	---	---	---	---
Manlius, very rocky-----	0-9	Very channery silt loam	GC, ML	A-4	0	8-32	53-91	52-91	46-87
	9-20	Extremely channery silt loam, loam	GC, GC-GM, CL	A-2-4, A-4, A-1-b	0	18-40	35-79	34-78	29-76
	20-29	Extremely channery silt loam, loam	GC, GC-GM	A-2-4, A-1-b, A-4	0	31-39	37-57	35-56	30-55
	>29	Bedrock			---	---	---	---	---
	0-7	Very channery silt loam	GC, CL, ML	A-4	0	8-32	53-91	52-91	46-87
NauDh: Nassau, very rocky-----	7-13	Extremely channery silt loam, loam	GC, GC-GM, CL	A-2-4, A-1-b, A-4	0	18-40	35-79	34-78	29-76
	>13	Bedrock			---	---	---	---	---
	0-7	Very channery silt loam	GC, CL, ML	A-4	0	8-32	53-91	52-91	46-87
	7-13	Extremely channery silt loam, loam	GC, GC-GM, CL	A-2-4, A-1-b, A-4	0	18-40	35-79	34-78	29-76
	>13	Bedrock			---	---	---	---	---

Table 27.-Engineering Properties-Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
NauDh: (cont.) Manlius, very rocky-----	In				Pct	Pct			
	0-9	Very channery silt loam	GC, ML	A-4	0	8-32	53-91	52-91	146-87
	9-20	Extremely channery silt loam, loam	GC, GC-GM, CL	A-1-b, A-2-4, A-4	0	18-40	35-79	34-78	129-76
NavE: Nassau-----	20-29	Extremely channery silt loam, loam	GC, GC-GM	A-2-4, A-1-b, A-4	0	31-39	37-57	35-56	130-55
	>29	Bedrock			---	---	---	---	---
	0-1	Slightly decomposed plant material	PT	A-8	0	0	100	100	100
	1-2	Very channery silt loam	GC, CL, ML	A-4	0	0-32	53-100	52-100	146-96
Rock outcrop----	2-15	Extremely channery silt loam, loam	GC, CL, GC-GM	A-2-4, A-1-b, A-4	0	18-40	35-79	34-78	129-76
	>15	Bedrock			---	---	---	---	---
	---	Bedrock			---	---	---	---	---
OpnCh: Oquaga, very rocky-----									
	0-1	Slightly decomposed plant material	PT	A-8	0	0	100	100	100
	1-4	Channery loam	ML, SC-SM	A-4, A-7-5	0	4-18	78-96	77-96	166-89
	4-20	Silt loam, very channery loam, fine sandy loam	GM, GC-GM, CL	A-4, A-1-b, A-6	0	18-36	44-78	43-77	133-77
	20-25	Extremely channery loam, silt loam, fine sandy loam, sandy loam	GC-GM, GP-GM, CL	A-1-a, A-2-4, A-6	0	23-46	14-70	12-70	9-70
Lackawanna, very rocky-----	>25	Bedrock			---	---	---	---	---
	0-2	Slightly decomposed plant material	PT	A-8	0	0	100	100	100
	2-3	Cobbly fine sandy loam	ML, GM	A-4, A-2-4	5-23	13-23	59-100	59-100	148-100
	3-7	Cobbly fine sandy loam	CL-ML, SM, CL	A-4, A-2-4, A-6	3-23	3-23	77-96	77-96	163-96
	7-8	Cobbly fine sandy loam	ML, GM	A-4, A-1-b	3-23	3-30	56-96	56-96	146-96
	8-16	Stony loam, silt loam, fine sandy loam	CL-ML, GM, CL	A-4, A-2-4, A-6	3-23	3-30	56-96	56-96	143-96
	16-24	Stony loam, silt loam, fine sandy loam	CL-ML, GM, CL	A-4, A-2-4, A-6	3-23	3-30	56-96	56-96	143-96
	24-29	Stony fine sandy loam, silt loam, loam, sandy loam	SC-SM, SM, CL	A-4, A-2-4, A-6	2-17	2-22	66-98	66-98	151-98
	29-60	Sandy loam, very cobbly fine sandy loam, silt loam, loam	GC-GM, SM, CL	A-2-4, A-4, A-6	2-17	2-22	66-98	66-98	151-98



Table 27.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--		
			Unified	AASHTO	>10 inches	3-10 inches			
							4	10	40
OpnDh: Oquaga, very rocky-----	In				Pct	Pct			
	0-1	Slightly decomposed plant material	PT	A-8	0	0	100	100	100
	1-4	Channery loam	ML, SC-SM	A-4, A-7-5	0	4-18	78-96	77-96	66-89
	4-20	Silt loam, very channery loam, fine sandy loam	GM, GC-GM, CL A-4, A-1-b, A-6		0	18-36	44-78	43-77	33-77
	20-25	Extremely channery loam, silt loam, fine sandy loam, sandy loam	GC-GM, GP-GM, CL A-1-a, A-2-4, A-6		0	23-46	14-70	12-70	9-70
	>25	Bedrock			---	---	---	---	---
Lackawanna, very rocky-----	0-2	Slightly decomposed plant material	PT	A-8	0	0	100	100	100
	2-3	Cobbly fine sandy loam	ML, GM	A-4, A-2-4	5-23	13-23	59-100	59-100	48-100
	3-7	Cobbly fine sandy loam	CL-ML, SM, CL A-4, A-2-4, A-6		3-23	3-23	77-96	77-96	63-96
	7-8	Cobbly fine sandy loam	ML, GM	A-4, A-1-b	3-23	3-30	56-96	56-96	46-96
	8-16	Stony loam, silt loam, fine sandy loam	CL-ML, GM, CL A-4, A-2-4, A-6		3-23	3-30	56-96	56-96	43-96
	16-24	Stony loam, silt loam, fine sandy loam	CL-ML, GM, CL A-4, A-2-4, A-6		3-23	3-30	56-96	56-96	43-96
	24-29	Stony fine sandy loam, silt loam, loam, sandy loam	SC-SM, SM, CL A-4, A-2-4, A-6		2-17	2-22	66-98	66-98	51-98
OprC: Oquaga-----	29-60	Sandy loam, very cobbly fine sandy loam, silt loam, loam	GC-GM, SM, CL A-2-4, A-4, A-6		2-17	2-22	66-98	66-98	51-98
	0-1	Slightly decomposed plant material	PT	A-8	0	0	100	100	100
	1-4	Channery loam	ML, SC-SM	A-4, A-7-5	0	4-18	78-96	77-96	66-89
	4-20	Silt loam, very channery loam, fine sandy loam	GM, GC-GM, CL A-4, A-1-b, A-6		0	18-36	44-78	43-77	33-77
	20-25	Extremely channery loam, silt loam, fine sandy loam, sandy loam	GC-GM, GP-GM, CL A-1-a, A-2-4, A-6		0	23-46	14-70	12-70	9-70
	>25	Bedrock			---	---	---	---	---
Rock outcrop----	---	Bedrock			---	---	---	---	---
OprE: Oquaga-----	0-1	Slightly decomposed plant material	PT	A-8	0	0	100	100	100
	1-4	Channery loam	ML, SC-SM	A-4, A-7-5	0	4-18	78-96	77-96	66-89

Table 27.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--			
			Unified	AASHTO	>10 inches	3-10 inches	Pct			
							4	10	40	
	In					Pct	Pct			
OprE: (cont.) Oquaga-----	4-20	Silt loam, very channery loam, fine sandy loam	GM, GC-GM, CL A-4, A-1-b, A-6		0	18-36	44-78	43-77	33-77	12
	20-25	Extremely channery loam, silt loam, fine sandy loam, sandy loam	GC-GM, GP-GM, A-1-a, A-2-4, CL A-6		0	23-46	14-70	12-70	9-70	
	>25	Bedrock			---	---	---	---	---	
	---	Bedrock			---	---	---	---	---	
PHG: Pits, sand and gravel-----	---	---	---		---	---	---	---	---	
PohA: Pompton-----	0-2	Moderately decomposed plant material	PT	A-8	0	0	100	100	100	
	2-4	Highly decomposed plant material	PT	A-8	0	0	100	100	100	
	4-8	Sandy loam	SC, SC-SM, SM A-4		0	0	100	100	76-87	13
	8-15	Sandy loam, gravelly sandy loam	SC, SC-SM, SM A-4		0	0	100	100	75-91	4
	15-20	Sandy loam, gravelly sandy loam	SC, SC-SM, SM A-4		0	0	100	100	75-91	4
	20-24	Loamy sand, sandy loam	SC-SM, SM	A-2-4, A-4	0	0	100	100	77-88	12
	24-32	Sandy loam, gravelly sandy loam	SC, SC-SM, SM A-4		0	0	100	100	75-91	4
	32-40	Loamy sand	SM	A-2-4	0	0	100	100	77-88	12
	40-47	Sand	SM, SP-SM	A-2-4, A-3	0	0	100	100	75-82	
	47-60	Fine sand	SM, SP-SM	A-2-4	0	0	100	100	93-100	1
QY: Pits, quarry----	---	---	---	---	---	---	---	---	---	
RkrB: Riverhead-----	0-13	Sandy loam	GC-GM, SC-SM, SM A-2-4, A-4, SM A-1-b		0	0	56-100	56-100	40-79	1
	13-23	Sandy loam, fine sandy loam	SC-SM, GM, SM A-2-4, A-1-b, A-6		0	0	50-91	50-91	34-78	1
	23-33	Gravelly sandy loam, fine sandy loam	SC-SM, GM, SC A-2-4, A-1-b, A-6		0	0	50-91	50-91	34-78	1
	33-41	Sandy loam, loamy sand, sand	SP, SW, SC	A-3, A-1-a, A-2-4	0	0	100	44-100	24-78	
	41-60	Sandy loam, sand, loamy sand	SC, SP, SW	A-3, A-1-a, A-2-4	0	0	100	44-100	24-78	

Table 27.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--			
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	
RnAF: Rock outcrop----	In				Pct	Pct				
	---	Bedrock			---	---	---	---	---	
	0-1	Slightly decomposed plant material	PT	A-8	0	0	100	100	100	
	1-2	Loam	ML, CL-ML	A-6, A-4	0	0	100	100	183-90	5
	2-3	Fine sandy loam	SC-SM, CL, SM	A-6, A-4	0	0	100	100	180-93	3
	3-4	Fine sandy loam	SC-SM, CL, SM	A-6, A-1-b, A-4	0	0	100	59-100	148-93	2
	4-12	Very gravelly loam, silt loam	GC, GP-GC, CL	A-2-4, A-6, A-1-a	0	0	14-100	14-100	11-93	
	12-17	Extremely gravelly loam, silt loam	GP-GC, GC, CL	A-1-a, A-2-4, A-6	0	0	14-100	14-100	11-93	
	>17	Bedrock			---	---	---	---	---	
	0-60	Stones, cobbles, boulders		A-1-a	25-100	45-100	0-10	0-5	0-5	
RnFC: Rock outcrop----	---	Bedrock			---	---	---	---	---	
	0-1	Slightly decomposed plant material	PT	A-8	0	0	100	100	100	
	1-3	Silt loam	CL, ML	A-4	0	0	90-100	90-100	180-96	7
	3-9	Silt loam, loam, fine sandy loam, very fine sandy loam	CL, GM	A-4	0	0	62-91	62-91	150-91	4
	9-15	Silt loam, loam, fine sandy loam, very fine sandy loam	CL, GM	A-4	0	0	62-91	62-91	150-91	4
	>15	Bedrock			---	---	---	---	---	
	0-2	Slightly decomposed plant material	PT	A-8	0	0	100	100	100	
	2-3	Moderately decomposed plant material	PT	A-8	0	0	100	100	100	
	3-5	Loam	CL-ML, ML	A-4	0	0	88-100	88-100	173-90	5
	5-15	Gravelly loam, silt loam, fine sandy loam	CL, SC, GP-GM	A-4, A-1-a	0	0	17-100	17-100	13-98	
Galway-----	15-24	Gravelly loam, silt loam, fine sandy loam	CL, GC, GP-GM	A-4, A-1-a	0	0	17-100	17-100	13-98	
	>24	Bedrock			---	---	---	---	---	

Table 27.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
RnFd: Rock outcrop----	In				Pct	Pct			
	---	Bedrock			---	---	---	---	---
	0-1	Slightly decomposed plant material	PT	A-8	0	0	100	100	100
	1-3	Silt loam	CL, ML	A-4	0	0	90-100	90-100	80-96
	3-9	Silt loam, loam, fine sandy loam, very fine sandy loam	CL, GM	A-4	0	0	62-91	62-91	50-91
	9-15	Silt loam, loam, fine sandy loam, very fine sandy loam	CL, GM	A-4	0	0	62-91	62-91	50-91
	>15	Bedrock			---	---	---	---	---
	0-2	Slightly decomposed plant material	PT	A-8	0	0	100	100	100
	2-3	Moderately decomposed plant material	PT	A-8	0	0	100	100	100
	3-5	Loam	CL-ML, ML	A-4	0	0	188-100	188-100	73-90
RoefBc: Rockaway, thin fragipan, extremely stony	5-15	Gravelly loam, silt loam, fine sandy loam	CL, SC, GP-GM	A-4, A-1-a	0	0	17-100	17-100	13-98
	15-24	Gravelly loam, silt loam, fine sandy loam	CL, GC, GP-GM	A-4, A-1-a	0	0	17-100	17-100	13-98
	>24	Bedrock			---	---	---	---	---
	0-2	Slightly decomposed plant material	PT	A-8	0	0	100	100	100
	2-3	Loam	CL-ML, ML, OL	A-4, A-7-5	0	0	100	89-100	74-90
	3-6	Loam	CL-ML, ML	A-4, A-2-4, A-7-5	0	0	69-100	54-100	45-90
	6-23	Gravelly loam, sandy loam	SC, SC-SM, CL	A-4, A-2-4, A-6	0	0	171-100	57-100	44-95
	23-41	Gravelly sandy loam, loam	SC, SC-SM	A-2-4, A-6, A-1-a	0-15	0	65-100	44-100	30-84
	41-60	Gravelly sandy loam, loamy sand	SM, SC-SM, SC	A-1-b, A-4	---	0-10	83-100	65-100	45-85
	0-2	Slightly decomposed plant material	PT	A-8	0	0	100	100	100
RoefCc: Rockaway, thin fragipan, extremely stony	2-3	Loam	CL-ML, ML, OL	A-4, A-7-5	0	0	100	89-100	74-90
	3-6	Loam	CL-ML, ML	A-4, A-2-4, A-7-5	0	0	69-100	54-100	45-90
	6-23	Gravelly loam, sandy loam	SC, SC-SM, CL	A-4, A-2-4, A-6	0	0	171-100	57-100	44-95
	23-41	Gravelly sandy loam, loam	SC, SC-SM	A-2-4, A-6, A-1-a	0-15	0	65-100	44-100	30-84
	41-60	Gravelly sandy loam, loamy sand	SM, SC-SM, SC	A-1-b, A-4	---	0-10	83-100	65-100	45-85
	0-2	Slightly decomposed plant material	PT	A-8	0	0	100	100	100



Table 27.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--			
			Unified	AASHTO	>10 inches	3-10 inches				
							Pct	Pct	4	10
RokB: (cont.) Chatfield-----	In									
	5-10	Silt loam, sandy loam, cobbly loam	SC-SM, CL	A-4, A-6	0-5	9-26	80-96	80-96	62-94	3
	10-24	Loam, silt loam, cobbly sandy loam	SC-SM, CL	A-2-4, A-6, A-1-b	0-5	4-25	69-91	69-91	47-80	2
	24-30	Loam, loamy sand, silt loam, cobbly sandy loam	SC-SM, CL, SM	A-1-b, A-2-4, A-6	0-5	4-25	63-91	63-91	40-85	1
	>30	Bedrock			---	---	---	---	---	
	---	Bedrock			---	---	---	---	---	
Rock outcrop----- RokC: Rockaway, thin fragipan-----	0-2	Slightly decomposed plant material	PT	A-8	0	0	100	100	100	
	2-3	Loam	CL-ML, ML, OL	A-4, A-7-5	0	0	100	89-100	74-90	5
	3-6	Loam	CL-ML, ML	A-4, A-2-4, A-7-5	0	0	69-100	54-100	45-90	3
	6-23	Gravelly loam, sandy loam	SC, SC-SM, CL	A-4, A-2-4, A-6	0	0	71-100	57-100	44-95	2
	23-41	Gravelly sandy loam, loam	SC, SC-SM	A-2-4, A-6, A-1-a	0-15	0	65-100	44-100	30-84	1
	41-60	Gravelly sandy loam, loamy sand	SM, SC-SM, SC	A-1-b, A-4	---	0-10	83-100	65-100	45-85	2
Chatfield----- RokD: Rockaway, thin fragipan-----	0-1	Slightly decomposed plant material	PT	A-8	0	0	100	100	100	
	1-3	Highly decomposed plant material	PT	A-8	0	0	100	100	100	
	3-5	Cobbly loam	SC-SM, ML	A-4	0-7	11-31	75-95	75-95	62-86	4
	5-10	Silt loam, sandy loam, cobbly loam	SC-SM, CL	A-4, A-6	0-5	9-26	80-96	80-96	62-94	3
	10-24	Loam, silt loam, cobbly sandy loam	SC-SM, CL	A-2-4, A-6, A-1-b	0-5	4-25	69-91	69-91	47-80	2
	24-30	Loam, loamy sand, silt loam, cobbly sandy loam	SC-SM, CL, SM	A-1-b, A-2-4, A-6	0-5	4-25	63-91	63-91	40-85	1
Rock outcrop----- RokD: Rockaway, thin fragipan-----	>30	Bedrock			---	---	---	---	---	
	---	Bedrock			---	---	---	---	---	
	0-2	Slightly decomposed plant material	PT	A-8	0	0	100	100	100	
	2-3	Loam	CL-ML, ML, OL	A-4, A-7-5	0	0	100	89-100	74-90	5
	3-6	Loam	CL-ML, ML	A-4, A-2-4, A-7-5	0	0	69-100	54-100	45-90	3



Table 27.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--					
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40			
RooC: Rockaway, thin fragipan-----	In											
	0-2	Slightly decomposed plant material	PT	A-8		0	0	100	100	100		
	2-3	Loam	CL-ML, ML, OL	A-4, A-7-5		0	0	100	89-100	74-90	5	
	3-6	Loam	CL-ML, ML	A-4, A-2-4, A-7-5		0	0	69-100	54-100	45-90	3	
	6-23	Gravelly loam, sandy loam	SC, SC-SM, CL	A-4, A-2-4, A-6		0	0	71-100	57-100	44-95	2	
	23-41	Gravelly sandy loam, loam	SC, SC-SM	A-2-4, A-6, A-1-a		0-15	0	65-100	44-100	30-84	1	
Urban land, Rockaway thin fragipan substratum-----	41-60	Gravelly sandy loam, loamy sand	SM, SC-SM, SC	A-1-b, A-4		---	0-10	83-100	65-100	45-85	2	
	0-12	Material				---	---	---	---	---		
	12-23	Gravelly loam, sandy loam	SC, SC-SM, CL	A-4, A-2-4		0	0	71-100	57-100	44-95	2	
	23-41	Gravelly sandy loam, loam	SC, SC-SM	A-2-4, A-4, A-1-a		0-15	0	65-100	44-100	30-84	1	
	41-60	Gravelly sandy loam, loamy sand	SC-SM, SM, SC	A-1-b, A-4		---	0-10	83-100	65-100	45-85	2	
RooD: Rockaway, thin fragipan-----												
	0-2	Slightly decomposed plant material	PT	A-8		0	0	100	100	100		
	2-3	Loam	ML, OL, CL-ML	A-4, A-7-5		0	0	100	89-100	74-90	5	
	3-6	Loam	CL-ML, ML	A-4, A-2-4, A-7-5		0	0	69-100	54-100	45-90	3	
	6-23	Gravelly loam, sandy loam	SC, SC-SM, CL	A-4, A-2-4, A-6		0	0	71-100	57-100	44-95	2	
	23-41	Gravelly sandy loam, loam	SC, SC-SM	A-2-4, A-6, A-1-a		0-15	0	65-100	44-100	30-84	1	
Urban land, Rockaway thin fragipan substratum-----	41-60	Gravelly sandy loam, loamy sand	SM, SC-SM, SC	A-1-b, A-4		---	0-10	83-100	65-100	45-85	2	
	0-12	Material				---	---	---	---	---		
	12-23	Gravelly loam, sandy loam	SC, SC-SM, CL	A-4, A-2-4		0	0	71-100	57-100	44-95	2	
	23-41	Gravelly sandy loam, loam	SC, SC-SM	A-2-4, A-4, A-1-a		0-15	0	65-100	44-100	30-84	1	
	41-60	Gravelly sandy loam, loamy sand	SC-SM, SM, SC	A-1-b, A-4		---	0-10	83-100	65-100	45-85	2	







Table 27.--Engineering Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
UnfA: Unadilla-----	In				Pct	Pct			
	0-8	Silt loam	CL, ML	A-4	0	0	100	95-100	84-96
	8-14	Silt loam	CL, ML	A-4	0	0	100	91-100	74-100
	14-25	Silt loam, loam, very fine sandy loam	ML, CL	A-4	0	0	100	91-100	74-100
	25-39	Silt loam, loam, very fine sandy loam	CL, ML	A-4	0	0	100	91-100	74-100
	39-60	Very fine sandy loam, silt loam, fine sandy loam, loamy very fine sand	CL, ML, SM	A-4	0	0	100	75-100	64-100
UnfB: Unadilla-----	0-8	Silt loam	CL, ML	A-4	0	0	100	95-100	84-96
	8-14	Silt loam	CL, ML	A-4	0	0	100	91-100	74-100
	14-25	Silt loam, loam, very fine sandy loam	CL, ML	A-4	0	0	100	91-100	74-100
	25-39	Silt loam, loam, very fine sandy loam	CL, ML	A-4	0	0	100	91-100	74-100
	39-60	Very fine sandy loam, silt loam, fine sandy loam, loamy very fine sand	CL, ML, SM	A-4	0	0	100	75-100	64-100
USCHRB: Urban land, Chatfield substratum-----	0-12	Material			---	---	---	---	---
	12-24	Loam, silt loam, cobbly sandy loam	SC-SM, CL-ML	A-2-4, A-4, A-1-b	0-5	4-25	69-91	69-91	47-80
	24-30	Loam, loamy sand, silt loam, cobbly sandy loam	CL, SM, SC-SM	A-1-b, A-2-4, A-4	0-5	4-25	63-91	63-91	40-85
	>30	Bedrock			---	---	---	---	---
Chatfield-----	0-1	Slightly decomposed plant material	PT	A-8	0	0	100	100	100
	1-3	Highly decomposed plant material	PT	A-8	0	0	100	100	100
	3-5	Cobbly loam	SC-SM, ML	A-4	0-7	11-31	75-95	75-95	62-86
	5-10	Silt loam, sandy loam, cobbly loam	SC-SM, CL	A-4, A-6	0-5	9-26	80-96	80-96	62-94
	10-24	Loam, silt loam, cobbly sandy loam	SC-SM, CL	A-2-4, A-6, A-1-b	0-5	4-25	69-91	69-91	47-80
	24-30	Loam, loamy sand, silt loam, cobbly sandy loam	SC-SM, CL, SM	A-1-b, A-2-4, A-6	0-5	4-25	63-91	63-91	40-85
	>30	Bedrock			---	---	---	---	---
Rock outcrop-----	---	Bedrock			---	---	---	---	---

Table 27.—Engineering Properties—Continued

[illegible]



Table 27.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				
			Unified	AASHTO	>10 inches	3-10		4	10	40	
						Pct	Pct				
USFAWB: Urban land, Farmington substratum-----	In										
	0-12	Material									
	12-15	Silt loam, loam, fine sandy loam, very fine sandy loam	CL, GM	A-4	0	0	62-91	162-91	50-91		
	>15	Bedrock									
	0-1	Slightly decomposed plant material	PT	A-8	0	0	100	100	100		
	1-3	Silt loam	CL, ML	A-4	0	0	90-100	190-100	180-96		
	3-9	Silt loam, loam, fine sandy loam, very fine sandy loam	CL, GM	A-4	0	0	62-91	162-91	50-91		
	9-15	Silt loam, loam, fine sandy loam, very fine sandy loam	CL, GM	A-4	0	0	62-91	162-91	50-91		
	>15	Bedrock									
	0-1	Slightly decomposed plant material	PT	A-8	0	0	100	100	100		
Wassaic-----	1-5	Loam	ML, CL	A-7-6, A-6	0	0	100	100	86-90		
	5-9	Loam, fine sandy loam, silt loam	ML, CL	A-6, A-7-6	0	0	100	100	78-98		
	9-17	Fine sandy loam, silty clay loam, loam, silt loam	CL, ML	A-4, A-7-6	0	0	100	100	85-100		
	17-28	Silty clay loam, loam, silt loam	CL	A-6, A-7-6	0	0	100	100	91-100		
	>28	Bedrock									
	0-12	Material									
	12-18	Coarse sandy loam, sandy loam	SM, SC	A-2-4, A-1-b, A-4	0	0	72-100	172-100	150-79		
	18-29	Very stony loamy coarse sand, coarse sand, sand, loamy sand	SM, GP	A-1-a, A-2-4, A-1-b	0-61	0-51	14-92	114-92	6-64		
	29-41	Very gravelly coarse sand, loamy coarse sand, sand, loamy sand	SP, GP, SP-SM	A-1-a, A-1-b	0-61	0-51	37-79	5-66	2-40		
	41-60	Extremely gravelly coarse sand, loamy coarse sand, sand, loamy sand	GP, SP-SM	A-1-a, A-1-b	0-61	0-51	37-79	5-66	2-40		
USHAZA: Urban land, Hazen substratum-----	0-12	Material									
	12-18	Coarse sandy loam, sandy loam	SM, SC	A-2-4, A-1-b, A-4	0	0	72-100	172-100	150-79		
	18-29	Very stony loamy coarse sand, coarse sand, sand, loamy sand	SM, GP	A-1-a, A-2-4, A-1-b	0-61	0-51	14-92	114-92	6-64		
	29-41	Very gravelly coarse sand, loamy coarse sand, sand, loamy sand	SP, GP, SP-SM	A-1-a, A-1-b	0-61	0-51	37-79	5-66	2-40		
	41-60	Extremely gravelly coarse sand, loamy coarse sand, sand, loamy sand	GP, SP-SM	A-1-a, A-1-b	0-61	0-51	37-79	5-66	2-40		
	0-12	Material									
	12-18	Coarse sandy loam, sandy loam	SM, SC	A-2-4, A-1-b, A-4	0	0	72-100	172-100	150-79		
	18-29	Very stony loamy coarse sand, coarse sand, sand, loamy sand	SM, GP	A-1-a, A-2-4, A-1-b	0-61	0-51	14-92	114-92	6-64		
	29-41	Very gravelly coarse sand, loamy coarse sand, sand, loamy sand	SP, GP, SP-SM	A-1-a, A-1-b	0-61	0-51	37-79	5-66	2-40		
	41-60	Extremely gravelly coarse sand, loamy coarse sand, sand, loamy sand	GP, SP-SM	A-1-a, A-1-b	0-61	0-51	37-79	5-66	2-40		



Table 27.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
In					Pct	Pct			
USHAZB: (cont.) Urban land, Hazen substratum-----	18-29	Very stony loamy coarse sand, coarse sand, loamy sand	GP, SM	A-1-a, A-2-4, A-1-b	0-61	0-51	14-92	14-92	6-64
	29-41	Very gravelly coarse sand, loamy coarse sand, loamy sand	SP, GP, SP-SM	A-1-a, A-1-b	0-61	0-51	37-79	5-66	2-40
	41-60	Extremely gravelly coarse sand, loamy coarse sand, loamy sand	GP, SP-SM	A-1-a, A-1-b	0-61	0-51	37-79	5-66	2-40
Hazen-----	0-1	Slightly decomposed plant material	PT	A-8	0	0	100	100	100
	1-10	Loam	CL, SC-SM, ML	A-4, A-6	0	0	86-100	186-100	171-90
	10-18	Coarse sandy loam, sandy loam	SM, SC-SM, SC	A-2-4, A-1-b, A-4	0	0	72-100	172-100	150-79
	18-29	Very stony loamy coarse sand, coarse sand, loamy sand	SM, GP, SC-SM	A-1-b, A-1-a, A-2-4	0-61	0-51	14-92	14-92	6-64
	29-41	Very gravelly coarse sand, loamy coarse sand, loamy sand	SP, GP, SP-SC	A-1-a, A-1-b	0-61	0-51	37-79	5-66	2-40
	41-60	Extremely gravelly coarse sand, loamy coarse sand, loamy sand	GP, SP-SC	A-1-a, A-1-b	0-61	0-51	37-79	5-66	2-40
Hoosic-----	0-1	Slightly decomposed plant material	PT	A-8	0	0	100	100	100
	1-9	Gravelly loam	GC-GM, GC, ML	A-2-4, A-4, A-6	0	0	57-97	145-97	37-87
	9-21	Very gravelly coarse sandy loam, sandy loam	GM, GP, SC	A-1-a, A-6	0	0-21	38-85	7-85	4-61
	21-27	Extremely gravelly loamy coarse sand, loamy sand, coarse sand	GP-GM, GP, SC-SM	A-1-a, A-1-b, A-2-4	0	0-51	41-85	6-78	3-54
	27-37	Extremely gravelly coarse sand, loamy coarse sand, loamy sand, sand	GP, SC-SM	A-1-a, A-1-b	0-14	0-51	37-85	6-78	2-48



Table 27.--Engineering Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
USHAZB: (cont.) Hoosic-----	37-49	Extremely gravelly coarse sand, loamy coarse sand, loamy sand, sand	SP, GP, SC-SM	A-1-a, A-1-b	0	0-51	41-85	6-78	2-48
	49-60	Extremely gravelly coarse sand, loamy coarse sand, loamy sand, sand	SW, SC-SM, GP	A-1-a, A-1-b	0-14	0-51	41-85	6-78	2-48
USNAMB: Urban land, Nassau substratum-----	0-12	Material			---	---	---	---	---
	12-13	Extremely channery silt loam, loam	CL, GC, GC-GM	A-2-4, A-1-b, A-4	0	18-40	35-79	34-78	129-76
	>13	Bedrock			---	---	---	---	---
Nassau-----	0-7	Very channery silt loam	GC, CL, ML	A-4	0	0-32	53-100	52-100	146-96
	7-13	Extremely channery silt loam, loam	GC, GC-GM, CL	A-2-4, A-1-b, A-4	0	18-40	35-79	34-78	129-76
	>13	Bedrock			---	---	---	---	---
Manlius-----	0-9	Very channery silt loam	GC, ML	A-4	0	8-32	53-91	52-91	146-87
	9-20	Extremely channery silt loam, loam	GC, GC-GM, CL	A-1-b, A-2-4, A-4	0	18-40	35-79	34-78	129-76
	20-29	Extremely channery silt loam, loam	GC, GC-GM	A-2-4, A-1-b, A-4	0	31-39	37-57	35-56	130-55
	>29	Bedrock			---	---	---	---	---
USNAMC: Urban land, Nassau substratum-----	0-12	Material			---	---	---	---	---
	12-13	Extremely channery silt loam, loam	CL, GC, GC-GM	A-2-4, A-1-b, A-4	0	18-40	35-79	34-78	129-76
	>13	Bedrock			---	---	---	---	---
Nassau-----	0-7	Very channery silt loam	ML, GC, CL	A-4	0	0-32	53-100	52-100	146-96
	7-13	Extremely channery silt loam, loam	GC, GC-GM, CL	A-2-4, A-1-b, A-4	0	18-40	35-79	34-78	129-76
	>13	Bedrock			---	---	---	---	---
Manlius-----	0-9	Very channery silt loam	GC, ML	A-4	0	8-32	53-91	52-91	146-87
	9-20	Extremely channery silt loam, loam	GC, GC-GM, CL	A-1-b, A-2-4, A-4	0	18-40	35-79	34-78	129-76
	20-29	Extremely channery silt loam, loam	GC, GC-GM	A-2-4, A-1-b, A-4	0	31-39	37-57	35-56	130-55
	>29	Bedrock			---	---	---	---	---









Table 27.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--			
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	
WacBc: Wallpack, extremely stony	In				Pct	Pct				
	0-1	Slightly decomposed plant material	PT	A-8	0	0	100	100	100	
	1-2	Gravelly silt loam	OH, SC	A-5, A-4	0	0	100	61-91	55-89	
	2-5	Gravelly silt loam, loam, sandy loam, fine sandy loam	CL, GC-GM	A-6, A-4	0	0	63-91	63-91	51-91	
	5-18	Loam, gravelly silt loam, fine sandy loam, sandy loam	GC-GM, CL	A-4, A-6	0	0	64-92	64-92	52-92	
	18-24	Silt loam, gravelly loam, fine sandy loam, sandy loam	GC, GC-GM, CL	A-6, A-1-b	0	0	45-79	45-79	36-79	
	24-42	Gravelly silt loam, loam, fine sandy loam, sandy loam	CL, GC-GM	A-6, A-2-4	0	0	46-80	46-80	36-80	
	42-60	Silt loam, gravelly loam, fine sandy loam, sandy loam	CL, GC-GM	A-6, A-1-b	0	0	45-79	45-79	36-79	
	0-3	Silt loam	CL, GC	A-2-4, A-6, A-4	0	0	35-100	35-100	31-96	
	3-9	Gravelly silt loam	CL, GC	A-2-4, A-6, A-4	0	0	35-100	35-100	31-95	
WacC: Wallpack-----	9-16	Loam, gravelly silt loam, fine sandy loam, sandy loam	GM, CL	A-6, A-1-b	0	0	39-100	39-100	30-100	
	16-25	Gravelly silt loam, loam, fine sandy loam, sandy loam	CL, SM	A-6, A-1-b	0	0	71-100	41-100	32-100	
	25-65	Fine sandy loam, very gravelly silt loam, loam, sandy loam	SC, SP, CL	A-1-a, A-6	0	0	53-100	7-100	5-100	
	0-1	Slightly decomposed plant material	PT	A-8	0	0	100	100	100	
	1-2	Gravelly silt loam	OH, SC	A-5, A-4	0	0	100	61-91	55-89	
	2-5	Gravelly silt loam, loam, sandy loam, fine sandy loam	CL, GC-GM	A-6, A-4	0	0	63-91	63-91	51-91	
	5-18	Loam, gravelly silt loam, fine sandy loam, sandy loam	GC-GM, CL	A-4, A-6	0	0	64-92	64-92	52-92	
	WacCc: Wallpack, extremely stony	0-1	Slightly decomposed plant material	PT	A-8	0	0	100	100	100
	1-2	Gravelly silt loam	OH, SC	A-5, A-4	0	0	100	61-91	55-89	
	2-5	Gravelly silt loam, loam, sandy loam, fine sandy loam	CL, GC-GM	A-6, A-4	0	0	63-91	63-91	51-91	











Table 28.—Physical Soil Properties

(Entries under "Erosion factors--T" apply to the entire profile. Entries under "Wind erodibility group" and "Wind apply only to the surface layer. Absence of an entry indicates that data were not estimated.)

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion	
		Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct	Kw	Kf
AhhBc: Alden, extremely stony-----											
	0-2	0-30	0-55	0-22	0.13-0.23	6-20	0.35-0.45	0.0-0.0	70-100	---	---
	2-7	23-30	50-55	18-22	1.34-1.54	0.6-2	0.16-0.22	0.0-0.1	4.0-10	.28	.3
	7-14	5-71	26-59	2-35	1.29-1.62	0.2-0.6	0.14-0.20	0.0-0.1	0.5-1.0	.37	.3
	14-28	5-71	26-59	2-35	1.29-1.62	0.2-0.6	0.14-0.20	0.0-0.1	0.5-1.0	.37	.3
	28-43	5-71	26-59	2-35	1.29-1.62	0.2-0.6	0.14-0.20	0.0-0.1	0.0-0.5	.37	.3
	43-60	5-68	17-59	8-35	1.29-1.62	0.06-0.6	0.08-0.15	0.0-0.1	0.0-0.5	.28	.3
AhcBc: Alden, gneiss till substratum, extremely stony----											
	0-1	0-30	0-55	0-22	0.13-0.23	6-20	0.35-0.45	0.0-0.0	70-100	---	---
	1-9	23-30	50-55	18-22	1.10-1.40	0.6-2	0.16-0.22	0.0-0.1	10-30	.28	.3
	9-23	5-71	26-59	2-35	1.29-1.62	0.2-0.6	0.14-0.20	0.0-0.1	0.5-1.0	.37	.3
	23-35	5-71	26-59	2-35	1.29-1.62	0.2-0.6	0.14-0.20	0.0-0.1	0.5-1.0	.37	.3
	35-60	5-68	17-59	8-35	1.29-1.62	0.06-0.6	0.08-0.15	0.0-0.1	0.0-0.5	.28	.3
AruCh: Arnot, very rocky----											
	0-1	0-47	0-50	0-18	0.13-0.23	6-20	0.35-0.45	0.0-0.0	70-100	---	---
	1-2	35-47	35-50	10-18	1.30-1.42	0.6-6	0.10-0.15	0.0-0.2	3.0-6.0	.24	.2
	2-3	53-68	17-44	2-17	1.29-1.42	0.6-6	0.08-0.12	0.0-0.1	0.0-0.5	.17	.2
	3-4	53-68	17-44	2-17	1.29-1.59	0.6-6	0.08-0.12	0.0-0.1	0.0-0.5	.17	.2
	4-12	16-47	35-65	10-18	1.29-1.59	0.6-6	0.08-0.12	0.0-0.1	0.0-0.5	.17	.2
	12-17	16-47	35-65	10-18	1.29-1.59	0.6-6	0.08-0.12	0.0-0.1	0.0-0.5	.17	.2
>17	---	---	---	---	0.00-0.2	0.00-0.00	---	---	---	---	
Lordstown, very rocky-----											
	0-1	0-47	0-50	0-18	0.13-0.23	6-20	0.35-0.45	0.0-0.0	70-100	---	---
	1-2	35-47	35-50	10-18	1.30-1.52	0.6-2	0.11-0.17	0.0-0.2	3.0-8.0	.20	.2
	2-3	53-68	17-44	2-17	1.29-1.42	0.6-2	0.10-0.16	0.0-0.1	0.5-1.0	.28	.3
	3-5	16-47	35-65	10-18	1.29-1.59	0.6-2	0.10-0.16	0.0-0.1	0.5-1.0	.28	.3
	5-17	21-47	35-65	10-18	1.29-1.59	0.6-2	0.10-0.16	0.0-0.1	0.5-1.0	.28	.3
	17-22	21-47	35-65	10-18	1.29-1.59	0.6-2	0.10-0.16	0.0-0.1	0.5-1.0	.28	.3
22-36	16-68	17-65	2-18	1.29-1.70	0.6-2	0.05-0.14	0.0-0.1	0.0-0.5	.28	.3	
>36	---	---	---	---	0.00-0.2	0.00-0.00	---	---	---	---	
ArvD: Arnot-----											
	0-1	0-47	0-50	0-18	0.13-0.23	6-20	0.35-0.45	0.0-0.0	70-100	---	---
	1-2	35-47	35-50	10-18	1.30-1.42	0.6-6	0.10-0.15	0.0-0.2	3.0-6.0	.24	.2
	2-3	53-68	17-44	2-17	1.29-1.42	0.6-6	0.08-0.12	0.0-0.1	0.0-0.5	.17	.2
	3-4	53-68	17-44	2-17	1.29-1.59	0.6-6	0.08-0.12	0.0-0.1	0.0-0.5	.17	.2
	4-12	16-47	35-65	10-18	1.29-1.59	0.6-6	0.08-0.12	0.0-0.1	0.0-0.5	.17	.2
	12-17	16-47	35-65	10-18	1.29-1.59	0.6-6	0.08-0.12	0.0-0.1	0.0-0.5	.17	.2
>17	---	---	---	---	0.00-0.2	0.00-0.00	---	---	---	---	

Table 28.—Physical Soil Properties—Continued

Map symbol and soil name	Depth		Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion f	
	In	Pct	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct	Kw	Kf
ArvD: (cont.) Lordstown-----	0-1	0-47	0-50		0-18	0.13-0.23	6-20	0.35-0.45	0.0-0.0	70-100	---	---
	1-2	35-47	35-50		10-18	1.30-1.52	0.6-2	0.11-0.17	0.0-0.2	3.0-8.0	.20	.28
	2-3	53-68	17-44		2-17	1.29-1.42	0.6-2	0.10-0.16	0.0-0.1	0.5-1.0	.28	.32
	3-5	16-47	35-65		10-18	1.29-1.59	0.6-2	0.10-0.16	0.0-0.1	0.5-1.0	.28	.32
	5-17	21-47	35-65		10-18	1.29-1.59	0.6-2	0.10-0.16	0.0-0.1	0.5-1.0	.28	.32
	17-22	21-47	35-65		10-18	1.29-1.59	0.6-2	0.10-0.16	0.0-0.1	0.5-1.0	.28	.32
	22-36	16-68	17-65		2-18	1.29-1.70	0.6-2	0.05-0.14	0.0-0.1	0.0-0.5	.28	.37
	>36	---	---	---	---	---	0.00-0.2	0.00-0.00	---	---	---	---
	---	---	---	---	---	---	0.00-0.2	0.00-0.00	---	---	---	---
	Rock outcrop----- ArvE: Arnot-----	0-1	0-47	0-50		0-18	0.13-0.23	6-20	0.35-0.45	0.0-0.0	70-100	---
1-2		35-47	35-50		10-18	1.30-1.42	0.6-6	0.10-0.15	0.0-0.2	3.0-6.0	.24	.28
2-3		53-68	17-44		2-17	1.29-1.42	0.6-6	0.08-0.12	0.0-0.1	0.0-0.5	.17	.24
3-4		53-68	17-44		2-17	1.29-1.59	0.6-6	0.08-0.12	0.0-0.1	0.0-0.5	.17	.24
4-12		16-47	35-65		10-18	1.29-1.59	0.6-6	0.08-0.12	0.0-0.1	0.0-0.5	.17	.24
12-17		16-47	35-65		10-18	1.29-1.59	0.6-6	0.08-0.12	0.0-0.1	0.0-0.5	.17	.24
>17		---	---	---	---	---	0.00-0.2	0.00-0.00	---	---	---	---
0-1		0-47	0-50		0-18	0.13-0.23	6-20	0.35-0.45	0.0-0.0	70-100	---	---
1-2		35-47	35-50		10-18	1.30-1.52	0.6-2	0.11-0.17	0.0-0.2	3.0-8.0	.20	.28
2-3		53-68	17-44		2-17	1.29-1.42	0.6-2	0.10-0.16	0.0-0.1	0.5-1.0	.28	.32
Lordstown----- AtcA: Atherton, very poorly drained-----	3-5	16-47	35-65		10-18	1.29-1.59	0.6-2	0.10-0.16	0.0-0.1	0.5-1.0	.28	.32
	5-17	21-47	35-65		10-18	1.29-1.59	0.6-2	0.10-0.16	0.0-0.1	0.5-1.0	.28	.32
	17-22	21-47	35-65		10-18	1.29-1.59	0.6-2	0.10-0.16	0.0-0.1	0.5-1.0	.28	.32
	22-36	16-68	17-65		2-18	1.29-1.70	0.6-2	0.05-0.14	0.0-0.1	0.0-0.5	.28	.37
	>36	---	---	---	---	---	0.00-0.2	0.00-0.00	---	---	---	---
	0-1	0-47	0-50		0-18	0.13-0.23	6-20	0.35-0.45	0.0-0.0	70-100	---	---
	1-2	35-47	35-50		10-18	1.30-1.52	0.6-2	0.11-0.17	0.0-0.2	3.0-8.0	.20	.28
	2-3	53-68	17-44		2-17	1.29-1.42	0.6-2	0.10-0.16	0.0-0.1	0.5-1.0	.28	.32
	3-5	16-47	35-65		10-18	1.29-1.59	0.6-2	0.10-0.16	0.0-0.1	0.5-1.0	.28	.32
	5-17	21-47	35-65		10-18	1.29-1.59	0.6-2	0.10-0.16	0.0-0.1	0.5-1.0	.28	.32
Rock outcrop----- AtcA: Atherton, very poorly drained-----	17-22	21-47	35-65		10-18	1.29-1.59	0.6-2	0.10-0.16	0.0-0.1	0.5-1.0	.28	.32
	22-36	16-68	17-65		2-18	1.29-1.70	0.6-2	0.05-0.14	0.0-0.1	0.0-0.5	.28	.37
	>36	---	---	---	---	---	0.00-0.2	0.00-0.00	---	---	---	---
	---	---	---	---	---	---	0.00-0.2	0.00-0.00	---	---	---	---
	---	---	---	---	---	---	0.00-0.2	0.00-0.00	---	---	---	---
	---	---	---	---	---	---	0.00-0.2	0.00-0.00	---	---	---	---
	---	---	---	---	---	---	0.00-0.2	0.00-0.00	---	---	---	---
	---	---	---	---	---	---	0.00-0.2	0.00-0.00	---	---	---	---
	---	---	---	---	---	---	0.00-0.2	0.00-0.00	---	---	---	---
	---	---	---	---	---	---	0.00-0.2	0.00-0.00	---	---	---	---
Atherton, very poorly drained-----	0-2	0-30	0-55		0-25	0.13-0.23	6-20	0.45-0.55	0.0-0.0	70-100	---	---
	2-4	0-30	0-55		0-25	0.13-0.23	2-6	0.45-0.55	0.0-0.0	70-100	---	---
	4-8	20-30	50-55		21-25	1.34-1.54	0.2-2	0.16-0.21	0.0-0.1	10-25	.32	.32
	8-10	5-71	17-59		2-35	1.34-1.54	0.2-2	0.10-0.19	0.0-0.1	1.0-8.0	.37	.43
	10-18	5-71	17-59		2-35	1.56-1.73	0.2-2	0.10-0.19	0.0-0.1	0.0-2.0	.37	.43
	18-29	5-71	17-59		2-35	1.56-1.73	0.2-2	0.10-0.19	0.0-0.1	0.0-2.0	.37	.43
	29-32	5-71	17-59		2-35	1.56-1.73	0.2-2	0.10-0.19	0.0-0.1	0.0-2.0	.37	.43
	32-41	5-71	17-59		2-35	1.56-1.73	0.2-2	0.10-0.19	0.0-0.1	0.0-2.0	.37	.43
	41-45	5-71	17-59		2-35	1.42-1.70	0.6-6	0.05-0.12	0.0-0.1	0.0-1.0	.28	.32
	45-50	5-71	17-59		2-35	1.42-1.70	0.6-6	0.05-0.12	0.0-0.1	0.0-1.0	.28	.32
Atherton, very poorly drained-----	50-60	5-71	17-59		2-35	1.42-1.70	0.6-6	0.05-0.12	0.0-0.1	0.0-1.0	.28	.32
	60-70	5-71	17-59		2-35	1.42-1.70	0.6-6	0.05-0.12	0.0-0.1	0.0-1.0	.28	.32

Table 28.—Physical Soil Properties—Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion fa	
										Kw	Kf
AtcA: (cont.) Atherton, poorly drained-----	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct		
	0-6	32-42	39-49	18-22	1.10-1.40	0.2-2	0.16-0.21	0.0-0.1	4.0-10	.32	.32
	6-12	5-71	17-59	2-35	1.25-1.55	0.2-2	0.10-0.19	0.0-0.1	0.0-2.0	.37	.43
	12-30	5-71	17-59	2-35	1.25-1.55	0.2-2	0.10-0.19	0.0-0.1	0.0-2.0	.37	.43
	30-40	5-76	10-59	2-35	1.45-1.65	0.6-6	0.05-0.12	0.0-0.1	0.0-1.0	.28	.32
	40-60	5-76	10-59	2-35	1.45-1.65	0.6-6	0.05-0.12	0.0-0.1	0.0-1.0	.28	.32
CatbA: Catden-----	0-2	0-30	0-55	0-22	0.13-0.23	2-6	0.35-0.45	0.0-0.0	70-100	---	---
	2-13	0-30	0-55	0-22	0.13-0.23	0.2-6	0.35-0.45	0.0-0.0	70-100	---	---
	13-20	0-30	0-55	0-22	0.13-0.23	0.2-6	0.35-0.45	0.0-0.0	70-100	---	---
	20-32	0-30	0-55	0-22	0.13-0.23	0.2-6	0.35-0.45	0.0-0.0	70-100	---	---
	32-60	0-30	0-55	0-22	0.13-0.23	0.2-6	0.35-0.45	0.0-0.0	70-100	---	---
ChkC: Chatfield-----	0-1	0-47	0-50	0-18	0.13-0.23	6-20	0.35-0.45	0.0-0.0	70-100	---	---
	1-3	0-47	0-50	0-18	0.13-0.23	0.6-2	0.35-0.45	0.0-0.0	20-60	---	---
	3-5	35-47	35-50	10-18	1.17-1.40	0.6-6	0.08-0.14	0.0-0.1	2.0-8.0	.20	.24
	5-10	35-76	15-65	9-18	1.29-1.59	0.6-6	0.08-0.18	0.0-0.1	0.5-2.0	.20	.24
	10-24	35-76	15-65	9-18	1.29-1.59	0.6-6	0.08-0.18	0.0-0.1	0.0-0.5	.20	.24
	24-30	16-85	12-65	3-18	1.29-1.59	0.6-6	0.08-0.18	0.0-0.1	0.0-0.5	.20	.24
Hollis-----	>30	---	---	---	---	0.01-20	0.00-0.00	---	---	---	---
	0-1	0-47	0-50	0-18	0.13-0.23	6-20	0.35-0.45	0.0-0.0	70-100	---	---
	1-3	0-47	0-50	0-18	0.13-0.23	0.6-2	0.35-0.45	0.0-0.0	20-60	---	---
	3-6	35-47	35-50	10-18	1.17-1.40	0.6-6	0.08-0.17	0.0-0.1	2.0-8.0	.20	.24
	6-8	35-76	15-50	9-18	1.29-1.59	0.6-6	0.06-0.18	0.0-0.1	0.2-1.0	.32	.37
	8-16	35-76	15-50	9-18	1.29-1.59	0.6-6	0.06-0.18	0.0-0.1	0.0-0.5	.32	.37
Rock outcrop-----	>16	---	---	---	---	0.01-20	0.00-0.00	---	---	---	---
	---	---	---	---	---	0.01-20	0.00-0.00	---	---	---	---
	---	---	---	---	---	0.01-20	0.00-0.00	---	---	---	---
	---	---	---	---	---	0.01-20	0.00-0.00	---	---	---	---
	---	---	---	---	---	0.01-20	0.00-0.00	---	---	---	---
	---	---	---	---	---	0.01-20	0.00-0.00	---	---	---	---
ChkE: Chatfield-----	0-1	0-47	0-50	0-18	0.13-0.23	6-20	0.35-0.45	0.0-0.0	70-100	---	---
	1-3	0-47	0-50	0-18	0.13-0.23	0.6-2	0.35-0.45	0.0-0.0	20-60	---	---
	3-5	35-47	35-50	10-18	1.17-1.40	0.6-6	0.08-0.14	0.0-0.1	2.0-8.0	.20	.24
	5-10	35-76	15-65	9-18	1.29-1.59	0.6-6	0.08-0.18	0.0-0.1	0.5-2.0	.20	.24
	10-24	35-76	15-65	9-18	1.29-1.59	0.6-6	0.08-0.18	0.0-0.1	0.0-0.5	.20	.24
	24-30	16-85	12-65	3-18	1.29-1.59	0.6-6	0.08-0.18	0.0-0.1	0.0-0.5	.20	.24

Table 28.—Physical Soil Properties—Continued

Map symbol and soil name	Depth		Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion	
	In	Pct									Kw	Kf
ChkE: (cont.) Hollis-----	0-1	0-47	0-50	0-18	0.13-0.23	6-20	0.35-0.45	0.0-0.0	70-100	---	---	
	1-3	0-47	0-50	0-18	0.13-0.23	0.6-2	0.35-0.45	0.0-0.0	20-60	---	---	
	3-6	35-47	35-50	10-18	1.17-1.40	0.6-6	0.08-0.17	0.0-0.1	2.0-8.0	.20	.2	
	6-8	35-76	15-50	9-18	1.29-1.59	0.6-6	0.06-0.18	0.0-0.1	0.2-1.0	.32	.3	
	8-16	35-76	15-50	9-18	1.29-1.59	0.6-6	0.06-0.18	0.0-0.1	0.0-0.5	.32	.3	
	>16	---	---	---	---	0.01-20	0.00-0.00	---	---	---	---	
Rock outcrop-----	---	---	---	---	---	0.01-20	0.00-0.00	---	---	---	---	
	---	---	---	---	---	---	---	---	---	---	---	
ChwBc: Chippewa, extremely stony-----	0-2	0-30	0-55	0-22	0.13-0.23	6-20	0.35-0.45	0.0-0.0	70-100	---	---	
	2-4	23-30	50-55	18-22	1.03-1.54	0.6-2	0.18-0.22	0.0-0.2	2.0-4.0	.32	.3	
	4-8	5-42	39-59	18-35	1.16-1.50	0.6-2	0.10-0.17	0.0-0.1	0.3-0.5	.37	.4	
	8-13	5-42	39-59	18-35	1.16-1.62	0.6-2	0.10-0.17	0.0-0.1	0.3-0.5	.37	.4	
	13-21	5-68	17-59	8-35	1.71-1.98	0.00-0.2	0.01-0.02	0.0-0.1	0.2-0.4	.28	.3	
	21-29	5-68	17-59	8-35	1.71-1.98	0.00-0.2	0.01-0.02	0.0-0.1	0.2-0.4	.28	.3	
	29-34	5-68	17-59	8-35	1.42-1.98	0.00-0.2	0.01-0.02	0.0-0.1	0.1-0.3	.28	.3	
	34-60	5-68	17-59	8-35	1.42-1.98	0.00-0.2	0.01-0.02	0.0-0.1	0.1-0.3	.28	.3	
	---	---	---	---	---	---	---	---	---	---	---	
	---	---	---	---	---	---	---	---	---	---	---	
CorA: Colonie-----	0-2	76-79	20-24	0-1	1.24-1.45	2-20	0.09-0.10	0.0-0.1	1.0-2.0	.32	.3	
	2-11	76-95	20-24	0-1	1.24-1.45	2-20	0.09-0.10	0.0-0.1	1.0-2.0	.32	.3	
	11-24	76-98	2-24	0-1	1.29-1.51	2-20	0.06-0.08	0.0-0.1	0.0-0.5	.24	.2	
	24-40	76-98	2-24	0-1	1.29-1.51	2-20	0.06-0.08	0.0-0.1	0.0-0.5	.24	.2	
	40-62	76-98	2-24	0-1	1.29-1.51	2-20	0.06-0.08	0.0-0.1	0.0-0.5	.24	.2	
	---	---	---	---	---	---	---	---	---	---	---	
CorB: Colonie-----	0-2	76-79	20-24	0-1	1.24-1.45	2-20	0.09-0.10	0.0-0.1	1.0-2.0	.32	.3	
	2-11	76-95	20-24	0-1	1.24-1.45	2-20	0.09-0.10	0.0-0.1	1.0-2.0	.32	.3	
	11-24	76-98	2-24	0-1	1.29-1.51	2-20	0.06-0.08	0.0-0.1	0.0-0.5	.24	.2	
	24-40	76-98	2-24	0-1	1.29-1.51	2-20	0.06-0.08	0.0-0.1	0.0-0.5	.24	.2	
	40-62	76-98	2-24	0-1	1.29-1.51	2-20	0.06-0.08	0.0-0.1	0.0-0.5	.24	.2	
	---	---	---	---	---	---	---	---	---	---	---	
DefAr: Delaware, rarely flooded-----	0-1	0-73	0-44	0-17	0.13-0.23	2-6	0.35-0.45	0.0-0.0	70-100	---	---	
	1-4	53-73	17-44	2-17	1.24-1.52	2-6	0.15-0.21	0.0-0.2	2.0-4.5	.28	.2	
	4-11	53-73	17-44	2-17	1.24-1.52	2-6	0.15-0.21	0.0-0.2	0.5-2.0	.28	.2	
	11-20	53-68	17-44	2-17	1.29-1.42	2-6	0.07-0.20	0.0-0.1	0.0-0.5	.28	.2	
	20-33	53-68	17-44	2-17	1.29-1.42	2-6	0.07-0.20	0.0-0.1	0.0-0.5	.28	.2	
	33-41	53-68	17-44	2-17	1.29-1.42	2-6	0.07-0.20	0.0-0.1	0.0-0.5	.28	.2	
	41-56	35-85	12-49	2-17	1.29-1.42	6-20	0.07-0.20	0.0-0.1	0.0-0.5	.28	.2	
	56-60	35-85	12-49	2-17	1.29-1.42	6-20	0.05-0.15	0.0-0.1	0.0-0.5	.28	.2	



Table 28.—Physical Soil Properties—Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Erosion fac		
									Organic matter	Kf	
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct		
FrdAb: Fredon, very stony---	0-1	0-32	0-65	0-18	0.13-0.23	6-20	0.35-0.45	0.0-0.0	70-100	---	
	1-8	16-32	50-65	13-18	1.34-1.54	0.2-2	0.16-0.20	0.0-0.1	3.0-5.0	.32	
	8-14	16-71	17-65	2-18	1.42-1.59	0.2-2	0.12-0.20	0.0-0.1	0.5-1.0	.37	
	14-18	16-71	17-65	2-18	1.42-1.59	0.2-2	0.12-0.20	0.0-0.1	0.5-1.0	.37	
	18-23	16-71	17-65	2-18	1.42-1.59	0.2-2	0.12-0.20	0.0-0.1	0.5-1.0	.37	
	23-31	82-98	2-13	0-7	0.67-1.58	6-20	0.02-0.06	0.0-0.1	0.0-0.5	.15	
	31-36	82-98	2-13	0-7	0.67-1.58	6-20	0.02-0.06	0.0-0.1	0.0-0.5	.15	
	36-45	82-98	2-13	0-7	0.67-1.58	6-20	0.02-0.06	0.0-0.1	0.0-0.5	.15	
	45-55	82-98	2-13	0-7	0.67-1.58	6-20	0.02-0.06	0.0-0.1	0.0-0.5	.15	
	55-60	82-98	2-13	0-7	0.67-1.58	6-20	0.02-0.06	0.0-0.1	0.0-0.5	.15	
Halsey, very stony---	0-1	0-32	0-65	0-18	0.13-0.23	6-20	0.35-0.45	0.0-0.0	70-100	---	
	1-5	16-32	50-65	13-18	1.34-1.54	0.6-6	0.14-0.24	0.0-0.1	3.0-5.0	.28	
	5-11	16-32	50-65	13-18	1.34-1.54	0.6-6	0.14-0.24	0.0-0.1	3.0-5.0	.28	
	11-20	16-71	17-65	2-18	1.42-1.59	0.6-6	0.12-0.18	0.0-0.1	0.5-1.5	.43	
	20-25	82-98	2-13	0-7	0.67-1.58	6-20	0.02-0.07	0.0-0.1	0.0-0.5	.10	
	25-35	82-98	2-13	0-7	0.67-1.58	6-20	0.02-0.07	0.0-0.1	0.0-0.5	.10	
	35-49	82-98	2-13	0-7	0.67-1.58	6-20	0.02-0.07	0.0-0.1	0.0-0.5	.10	
	49-56	82-98	2-13	0-7	0.67-1.58	6-20	0.02-0.07	0.0-0.1	0.0-0.5	.10	
	56-60	82-98	2-13	0-7	0.67-1.58	6-20	0.02-0.07	0.0-0.1	0.0-0.5	.10	
	GawEh: Galway, very rocky---	0-2	0-47	0-50	0-18	0.13-0.23	6-20	0.35-0.45	0.0-0.0	70-100	---
2-3		0-47	0-50	0-18	0.13-0.23	2-6	0.35-0.45	0.0-0.0	70-100	---	
3-5		35-47	35-50	10-18	1.12-1.30	0.6-2	0.15-0.21	0.0-0.1	2.0-6.0	.32	
5-15		16-68	17-65	2-18	1.29-1.58	0.6-2	0.08-0.19	0.0-0.1	0.0-1.0	.24	
15-24		16-68	17-65	2-18	1.29-1.58	0.6-2	0.04-0.14	0.0-0.1	0.0-1.0	.24	
>24		---	---	---	---	0.00-0.6	0.00-0.00	---	---	---	
HdxAb: Hazen, very stony---		0-1	0-47	0-50	0-18	0.13-0.23	6-20	0.35-0.45	0.0-0.0	70-100	---
		1-10	35-47	35-50	10-18	1.30-1.52	0.6-6	0.12-0.18	0.0-0.2	1.8-5.2	.28
		10-18	61-76	15-26	5-14	1.50-1.57	0.6-6	0.10-0.14	0.0-0.1	0.2-1.0	.28
		18-29	82-98	2-13	0-7	0.67-1.58	6-20	0.02-0.08	0.0-0.1	0.0-0.5	.10
	29-41	82-98	2-13	0-7	0.67-1.58	6-20	0.02-0.08	0.0-0.1	0.0-0.5	.10	
	41-60	82-98	2-13	0-7	0.67-1.58	6-20	0.02-0.08	0.0-0.1	0.0-0.5	.10	
	Hoosic, very stony---	0-1	0-47	0-50	0-18	0.13-0.23	6-20	0.35-0.45	0.0-0.0	70-100	---
		1-9	35-47	35-50	10-18	1.30-1.52	2-20	0.11-0.16	0.0-0.2	1.8-5.2	.24
		9-21	35-76	15-50	5-18	1.45-1.57	2-20	0.05-0.14	0.0-0.1	0.2-1.0	.20
		21-27	82-98	2-13	0-7	0.67-1.58	20-100	0.01-0.05	0.0-0.1	0.0-0.5	.10
27-37		82-98	2-13	0-7	0.67-1.58	20-100	0.01-0.05	0.0-0.1	0.0-0.5	.10	
37-49		82-98	2-13	0-7	0.67-1.58	20-100	0.01-0.05	0.0-0.1	0.0-0.5	.10	
49-60		82-98	2-13	0-7	0.67-1.58	20-100	0.01-0.05	0.0-0.1	0.0-0.5	.10	



Table 28.—Physical Soil Properties—Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct	Kw Kf
HdxBb: Hazen, very stony---										
	0-1	0-47	0-50	0-18	0.13-0.23	6-20	0.35-0.45	0.0-0.0	70-100	---
	1-10	35-47	35-50	10-18	1.30-1.52	0.6-6	0.12-0.18	0.0-0.2	1.8-5.2	.28
	10-18	61-76	15-26	5-14	1.50-1.57	0.6-6	0.10-0.14	0.0-0.1	0.2-1.0	.28
	18-29	82-98	2-13	0-7	0.67-1.58	6-20	0.02-0.08	0.0-0.1	0.1-0.5	.10
	29-41	82-98	2-13	0-7	0.67-1.58	6-20	0.02-0.08	0.0-0.1	0.0-0.5	.10
Hoosic, very stony--	41-60	82-98	2-13	0-7	0.67-1.58	6-20	0.02-0.08	0.0-0.1	0.0-0.5	.10
	0-1	0-47	0-50	0-18	0.13-0.23	6-20	0.35-0.45	0.0-0.0	70-100	---
	1-9	35-47	35-50	10-18	1.30-1.52	2-20	0.11-0.16	0.0-0.2	1.8-5.2	.24
	9-21	35-76	15-50	5-18	1.45-1.57	2-20	0.05-0.14	0.0-0.1	0.2-1.0	.20
	21-27	82-98	2-13	0-7	0.67-1.58	20-100	0.01-0.05	0.0-0.1	0.0-0.5	.10
	27-37	82-98	2-13	0-7	0.67-1.58	20-100	0.01-0.05	0.0-0.1	0.0-0.5	.10
HhxBc: Hibernia, extremely stony-----	37-49	82-98	2-13	0-7	0.67-1.58	20-100	0.01-0.05	0.0-0.1	0.0-0.5	.10
	49-60	82-98	2-13	0-7	0.67-1.58	20-100	0.01-0.05	0.0-0.1	0.0-0.5	.10
	0-2	0-47	0-50	0-18	0.13-0.23	6-20	0.35-0.45	0.0-0.0	70-100	---
	2-4	35-47	35-50	10-18	1.17-1.40	0.6-2	0.10-0.16	0.0-0.1	2.0-5.0	.24
	4-11	35-76	15-50	9-18	1.42-1.70	0.6-2	0.10-0.16	0.0-0.1	0.1-2.0	.32
	11-19	35-76	15-50	9-18	1.42-1.70	0.6-2	0.10-0.16	0.0-0.1	0.1-2.0	.32
HkrgBb: Hinckley, very stony	19-29	35-76	15-50	9-18	1.64-1.79	0.00-0.2	0.06-0.10	0.0-0.1	0.0-0.5	.24
	29-35	5-85	12-59	3-39	1.20-1.64	0.6-6	0.06-0.09	0.0-0.1	0.0-0.5	.20
	35-60	5-85	12-59	3-39	1.20-1.64	0.6-6	0.06-0.09	0.0-0.1	0.0-0.5	.20
	0-1	0-84	0-12	0-7	0.13-0.23	6-20	0.35-0.45	0.0-0.0	70-100	---
	1-3	82-84	11-12	3-7	1.24-1.68	6-20	0.05-0.10	0.0-0.5	2.0-7.0	.17
	3-9	61-85	11-26	3-14	0.67-1.58	6-20	0.01-0.10	0.0-0.1	0.2-7.0	.17
HkrgCb: Hinckley, very stony	9-19	82-98	2-13	0-7	0.67-1.58	6-20	0.01-0.10	0.0-0.1	0.0-0.5	.17
	19-60	82-98	2-13	0-7	0.67-1.58	6-100	0.01-0.02	0.0-0.1	0.0-0.5	.17
	0-1	0-84	0-12	0-7	0.13-0.23	6-20	0.35-0.45	0.0-0.0	70-100	---
	1-3	82-84	11-12	3-7	1.24-1.68	6-20	0.05-0.10	0.0-0.5	2.0-7.0	.17
	3-9	61-85	11-26	3-14	0.67-1.58	6-20	0.01-0.10	0.0-0.1	0.2-7.0	.17
	9-19	82-98	2-13	0-7	0.67-1.58	6-20	0.01-0.10	0.0-0.1	0.0-0.5	.17
HncD: Hollis-----	19-60	82-98	2-13	0-7	0.67-1.58	6-100	0.01-0.02	0.0-0.1	0.0-0.5	.17
	0-1	0-47	0-50	0-18	0.13-0.23	6-20	0.35-0.45	0.0-0.0	70-100	---
	1-3	0-47	0-50	0-18	0.13-0.23	0.6-2	0.35-0.45	0.0-0.0	20-60	---
	3-6	35-47	35-50	10-18	1.17-1.40	0.6-6	0.08-0.17	0.0-0.1	2.0-8.0	.20
	6-8	35-76	15-50	9-18	1.29-1.59	0.6-6	0.06-0.18	0.0-0.1	0.2-1.0	.32
	8-16	35-76	15-50	9-18	1.29-1.59	0.6-6	0.06-0.18	0.0-0.1	0.0-0.5	.32
Rock outcrop-----	>16	---	---	---	---	0.01-20	0.00-0.00	---	---	---
	---	---	---	---	---	0.01-20	0.00-0.00	---	---	---



Table 28.—Physical Soil Properties—Continued

Map symbol and soil name	Depth		Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion fa	
	In	Pct	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct	Kw	Kf
LacBc: Lackawanna, extremely stony----												
	0-2	0-68	0-44	0-44	0-17	0.13-0.23	6-20	0.35-0.45	0.0-0.0	70-100	---	---
	2-3	53-68	17-44	17-44	2-17	1.30-1.52	0.6-2	0.10-0.16	0.0-0.1	3.0-6.0	.24	.32
	3-7	53-68	17-44	17-44	2-17	1.29-1.42	0.6-2	0.10-0.16	0.0-0.1	0.0-2.0	.24	.32
	7-8	53-68	17-44	17-44	2-17	1.29-1.59	0.6-2	0.10-0.16	0.0-0.1	2.0-6.0	.24	.32
	8-16	16-68	17-65	17-65	2-18	1.29-1.59	0.6-2	0.10-0.16	0.0-0.1	0.0-2.0	.28	.32
	16-24	16-68	17-65	17-65	2-18	1.29-1.59	0.6-2	0.10-0.16	0.0-0.1	0.0-2.0	.28	.32
	24-29	16-76	15-65	15-65	2-18	1.64-1.98	0.06-0.2	0.06-0.12	0.0-0.1	0.0-0.5	.20	.24
	29-60	16-76	15-65	15-65	2-18	1.64-1.98	0.06-0.2	0.06-0.12	0.0-0.1	0.0-0.5	.20	.24
LacCc: Lackawanna, extremely stony----												
	0-2	0-68	0-44	0-44	0-17	0.13-0.23	6-20	0.35-0.45	0.0-0.0	70-100	---	---
	2-3	53-68	17-44	17-44	2-17	1.30-1.52	0.6-2	0.10-0.16	0.0-0.1	3.0-6.0	.24	.32
	3-7	53-68	17-44	17-44	2-17	1.29-1.42	0.6-2	0.10-0.16	0.0-0.1	0.0-2.0	.24	.32
	7-8	53-68	17-44	17-44	2-17	1.29-1.59	0.6-2	0.10-0.16	0.0-0.1	2.0-6.0	.24	.32
	8-16	16-68	17-65	17-65	2-18	1.29-1.59	0.6-2	0.10-0.16	0.0-0.1	0.0-2.0	.28	.32
	16-24	16-68	17-65	17-65	2-18	1.29-1.59	0.6-2	0.10-0.16	0.0-0.1	0.0-2.0	.28	.32
	24-29	16-76	15-65	15-65	2-18	1.64-1.98	0.06-0.2	0.06-0.12	0.0-0.1	0.0-0.5	.20	.24
	29-60	16-76	15-65	15-65	2-18	1.64-1.98	0.06-0.2	0.06-0.12	0.0-0.1	0.0-0.5	.20	.24
LacDc: Lackawanna, extremely stony----												
	0-2	0-68	0-44	0-44	0-17	0.13-0.23	6-20	0.35-0.45	0.0-0.0	70-100	---	---
	2-3	53-68	17-44	17-44	2-17	1.30-1.52	0.6-2	0.10-0.16	0.0-0.1	3.0-6.0	.24	.32
	3-7	53-68	17-44	17-44	2-17	1.29-1.42	0.6-2	0.10-0.16	0.0-0.1	0.0-2.0	.24	.32
	7-8	53-68	17-44	17-44	2-17	1.29-1.59	0.6-2	0.10-0.16	0.0-0.1	2.0-6.0	.24	.32
	8-16	16-68	17-65	17-65	2-18	1.29-1.59	0.6-2	0.10-0.16	0.0-0.1	0.0-2.0	.28	.32
	16-24	16-68	17-65	17-65	2-18	1.29-1.59	0.6-2	0.10-0.16	0.0-0.1	0.0-2.0	.28	.32
	24-29	16-76	15-65	15-65	2-18	1.64-1.98	0.06-0.2	0.06-0.12	0.0-0.1	0.0-0.5	.20	.24
	29-60	16-76	15-65	15-65	2-18	1.64-1.98	0.06-0.2	0.06-0.12	0.0-0.1	0.0-0.5	.20	.24
LorB: Lordstown-----												
	0-1	0-47	0-50	0-50	0-18	0.13-0.23	6-20	0.35-0.45	0.0-0.0	70-100	---	---
	1-2	35-47	35-50	35-50	10-18	1.30-1.52	0.6-2	0.11-0.17	0.0-0.2	3.0-8.0	.20	.28
	2-3	53-68	17-44	17-44	2-17	1.29-1.42	0.6-2	0.10-0.16	0.0-0.1	0.5-1.0	.28	.32
	3-5	16-47	35-65	35-65	10-18	1.29-1.59	0.6-2	0.10-0.16	0.0-0.1	0.5-1.0	.28	.32
	5-17	21-47	35-65	35-65	10-18	1.29-1.59	0.6-2	0.10-0.16	0.0-0.1	0.5-1.0	.28	.32
	17-22	21-47	35-65	35-65	10-18	1.29-1.59	0.6-2	0.10-0.16	0.0-0.1	0.5-1.0	.28	.32
	24-29	16-76	15-65	15-65	2-18	1.64-1.98	0.06-0.2	0.06-0.12	0.0-0.1	0.0-0.5	.20	.24
	22-36	16-68	17-65	17-65	2-18	1.29-1.70	0.6-2	0.05-0.14	0.0-0.1	0.0-0.5	.28	.37
>36	---	---	---	---	---	0.00-0.2	0.00-0.00	---	---	---	---	
Wallpack-----												
	0-3	16-32	50-65	50-65	13-17	1.34-1.54	0.6-6	0.16-0.20	0.0-0.1	1.2-3.2	.37	.43
	3-9	16-32	50-65	50-65	13-17	1.34-1.54	0.6-6	0.12-0.20	0.0-0.1	0.8-2.2	.24	.49
	9-16	11-76	15-65	15-65	2-17	1.29-1.73	0.6-6	0.12-0.16	0.0-0.1	0.0-0.5	.37	.55
	16-25	11-76	15-65	15-65	2-20	1.71-1.98	0.00-0.6	0.07-0.12	0.0-0.1	0.0-0.2	.32	.55
	25-65	11-76	15-65	15-65	2-20	1.71-1.98	0.00-0.6	0.07-0.14	0.0-0.1	0.0-0.2	.24	.55

Table 28.—Physical Soil Properties—Continued

Map symbol and soil name	Depth		Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion f	
	In	Pct	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct	Kw	Kf
LorC: Lordstown-----	0-1	0-47	0-50	0-18	0.13-0.23	6-20		0.35-0.45	0.0-0.0	70-100	---	---
	1-2	35-47	35-50	10-18	1.30-1.52	0.6-2		0.11-0.17	0.0-0.2	3.0-8.0	.20	.21
	2-3	53-68	17-44	2-17	1.29-1.42	0.6-2		0.10-0.16	0.0-0.1	0.5-1.0	.28	.31
	3-5	16-47	35-65	10-18	1.29-1.59	0.6-2		0.10-0.16	0.0-0.1	0.5-1.0	.28	.33
	5-17	21-47	35-65	10-18	1.29-1.59	0.6-2		0.10-0.16	0.0-0.1	0.5-1.0	.28	.33
	17-22	21-47	35-65	10-18	1.29-1.59	0.6-2		0.10-0.16	0.0-0.1	0.5-1.0	.28	.33
	22-36	16-68	17-65	2-18	1.29-1.70	0.6-2		0.05-0.14	0.0-0.1	0.0-0.5	.28	.33
	>36	---	---	---	---	0.00-0.2		0.00-0.00	---	---	---	---
Wallpack-----	0-3	16-32	50-65	13-17	1.34-1.54	0.6-6		0.16-0.20	0.0-0.1	1.2-3.2	.37	.41
	3-9	16-32	50-65	13-17	1.34-1.54	0.6-6		0.12-0.20	0.0-0.1	0.8-2.5	.24	.41
	9-16	11-76	15-65	2-17	1.29-1.73	0.6-6		0.10-0.16	0.0-0.1	0.0-0.5	.37	.51
	16-25	11-76	15-65	2-20	1.71-1.98	0.00-0.6		0.07-0.12	0.0-0.1	0.0-0.2	.32	.51
	25-65	11-76	15-65	2-20	1.71-1.98	0.00-0.6		0.07-0.14	0.0-0.1	0.0-0.2	.24	.51
LorCh: Lordstown, very rocky-----	0-1	0-47	0-50	0-18	0.13-0.23	6-20		0.35-0.45	0.0-0.0	70-100	---	---
	1-2	35-47	35-50	10-18	1.30-1.52	0.6-2		0.11-0.17	0.0-0.2	3.0-8.0	.20	.21
	2-3	53-68	17-44	2-17	1.29-1.42	0.6-2		0.10-0.16	0.0-0.1	0.5-1.0	.28	.33
	3-5	16-47	35-65	10-18	1.29-1.59	0.6-2		0.10-0.16	0.0-0.1	0.5-1.0	.28	.33
	5-17	21-47	35-65	10-18	1.29-1.59	0.6-2		0.10-0.16	0.0-0.1	0.5-1.0	.28	.33
	17-22	21-47	35-65	10-18	1.29-1.59	0.6-2		0.10-0.16	0.0-0.1	0.5-1.0	.28	.33
	22-36	16-68	17-65	2-18	1.29-1.70	0.6-2		0.05-0.14	0.0-0.1	0.0-0.5	.28	.33
	>36	---	---	---	---	0.00-0.2		0.00-0.00	---	---	---	---
Wallpack, very rocky	0-1	0-32	0-65	0-17	0.13-0.23	6-20		0.35-0.45	0.0-0.0	70-100	---	---
	1-2	16-32	50-65	13-17	1.34-1.54	0.6-6		0.18-0.23	0.0-0.1	1.0-20	.24	.33
	2-5	16-76	15-65	9-17	1.16-1.50	0.6-6		0.14-0.20	0.0-0.1	0.5-2.5	.37	.51
	5-18	11-76	15-65	9-17	1.29-1.73	0.6-6		0.14-0.18	0.0-0.1	0.0-0.5	.43	.61
	18-24	11-76	15-65	9-20	1.64-1.98	0.00-0.6		0.08-0.16	0.0-1.5	0.0-0.2	.49	.61
	24-42	11-76	15-65	9-20	1.64-1.98	0.00-0.6		0.08-0.14	0.0-1.5	0.0-0.2	.43	.61
	42-60	11-76	15-65	9-20	1.64-1.98	0.00-0.6		0.08-0.14	0.0-1.5	0.0-0.2	.43	.51
LorD: Lordstown-----	0-1	0-47	0-50	0-18	0.13-0.23	6-20		0.35-0.45	0.0-0.0	70-100	---	---
	1-2	35-47	35-50	10-18	1.30-1.52	0.6-2		0.11-0.17	0.0-0.2	3.0-8.0	.20	.21
	2-3	53-68	17-44	2-17	1.29-1.42	0.6-2		0.10-0.16	0.0-0.1	0.5-1.0	.28	.33
	3-5	16-47	35-65	10-18	1.29-1.59	0.6-2		0.10-0.16	0.0-0.1	0.5-1.0	.28	.33
	5-17	21-47	35-65	10-18	1.29-1.59	0.6-2		0.10-0.16	0.0-0.1	0.5-1.0	.28	.33
	17-22	21-47	35-65	10-18	1.29-1.59	0.6-2		0.10-0.16	0.0-0.1	0.5-1.0	.28	.33
	22-36	16-68	17-65	2-18	1.29-1.70	0.6-2		0.05-0.14	0.0-0.1	0.0-0.5	.28	.33
	>36	---	---	---	---	0.00-0.2		0.00-0.00	---	---	---	---

Table 28.—Physical Soil Properties—Continued

Map symbol and soil name	Depth		Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion f
	In	Pct						In/in	Pct		
LorD: (cont.) Wallpack-----											
	0-3	16-32	50-65	13-17	1.34-1.54	0.6-6		0.16-0.20	0.0-0.1	1.2-3.2	.37
	3-9	16-32	50-65	13-17	1.34-1.54	0.6-6		0.12-0.20	0.0-0.1	0.8-2.2	.24
	9-16	11-76	15-65	2-17	1.29-1.73	0.6-6		0.12-0.16	0.0-0.1	0.0-0.5	.37
	16-25	11-76	15-65	2-20	1.71-1.98	0.00-0.6		0.07-0.12	0.0-0.1	0.0-0.2	.32
LorDh: Lordstown, very rocky-----	25-65	11-76	15-65	2-20	1.71-1.98	0.00-0.6		0.07-0.14	0.0-0.1	0.0-0.2	.24
	0-1	0-47	0-50	0-18	0.13-0.23	6-20		0.35-0.45	0.0-0.0	70-100	---
	1-2	35-47	35-50	10-18	1.30-1.52	0.6-2		0.11-0.17	0.0-0.2	3.0-8.0	.20
Wallpack, very rocky	2-3	53-68	17-44	2-17	1.29-1.42	0.6-2		0.10-0.16	0.0-0.1	0.5-1.0	.28
	3-5	16-47	35-65	10-18	1.29-1.59	0.6-2		0.10-0.16	0.0-0.1	0.5-1.0	.28
	5-17	21-47	35-65	10-18	1.29-1.59	0.6-2		0.10-0.16	0.0-0.1	0.5-1.0	.28
	17-22	21-47	35-65	10-18	1.29-1.59	0.6-2		0.10-0.16	0.0-0.1	0.5-1.0	.28
	22-36	16-68	17-65	2-18	1.29-1.70	0.6-2		0.05-0.14	0.0-0.1	0.0-0.5	.28
	>36	---	---	---	---	0.00-0.2		0.00-0.00	---	---	---
	0-1	0-32	0-65	0-17	0.13-0.23	6-20		0.35-0.45	0.0-0.0	70-100	---
	1-2	16-32	50-65	13-17	1.34-1.54	0.6-6		0.18-0.23	0.0-0.1	1.0-20	.24
	2-5	16-76	15-65	9-17	1.16-1.50	0.6-6		0.14-0.20	0.0-0.1	0.5-2.5	.37
MabEh: Manlius, very rocky-	5-18	11-76	15-65	9-17	1.29-1.73	0.6-6		0.14-0.18	0.0-0.1	0.0-0.5	.43
	18-24	11-76	15-65	9-20	1.64-1.98	0.00-0.6		0.08-0.16	0.0-1.5	0.0-0.2	.49
	24-42	11-76	15-65	9-20	1.64-1.98	0.00-0.6		0.08-0.14	0.0-1.5	0.0-0.2	.43
	42-60	11-76	15-65	9-20	1.64-1.98	0.00-0.6		0.08-0.14	0.0-1.5	0.0-0.2	.43
	0-1	0-32	0-65	0-18	0.13-0.23	6-20		0.35-0.45	0.0-0.0	70-100	---
	1-2	16-32	50-65	13-18	1.34-1.54	0.6-6		0.10-0.18	0.0-0.1	2.0-8.0	.28
	2-18	16-47	35-65	10-18	1.29-1.55	0.6-6		0.08-0.12	0.0-0.1	0.0-1.0	.20
Nassau, very rocky--	18-27	16-47	35-65	10-18	1.42-1.70	0.6-6		0.03-0.09	0.0-0.1	0.0-0.0	.20
	>27	---	---	---	---	0.00-0.06		0.00-0.00	---	---	---
	0-1	0-32	0-65	0-18	0.13-0.23	6-20		0.35-0.45	0.0-0.0	70-100	---
	1-2	16-32	50-65	13-18	1.34-1.54	0.6-6		0.13-0.17	0.0-0.1	3.0-5.0	.32
NauBh: Nassau, very rocky--	2-15	16-47	35-65	10-18	1.29-1.55	0.6-6		0.07-0.12	0.0-0.1	0.0-1.0	.32
	>15	---	---	---	---	0.00-0.06		0.00-0.00	---	---	---
	0-7	16-32	50-65	13-18	1.34-1.54	0.6-6		0.13-0.17	0.0-0.1	3.0-5.0	.32
Manlius, very rocky-	7-13	16-47	35-65	10-18	1.29-1.55	0.6-6		0.07-0.12	0.0-0.1	0.0-1.0	.32
	>13	---	---	---	---	0.00-0.06		0.00-0.00	---	---	---
	0-9	16-32	50-65	13-18	1.34-1.54	0.6-6		0.10-0.18	0.0-0.1	2.0-8.0	.28
	9-20	16-47	35-65	10-18	1.29-1.55	0.6-6		0.08-0.12	0.0-0.1	0.0-1.0	.20
	20-29	16-47	35-65	10-18	1.42-1.70	0.6-6		0.03-0.09	0.0-0.1	0.0-0.0	.20
	>29	---	---	---	---	0.00-0.06		0.00-0.00	---	---	---

Table 28.—Physical Soil Properties—Continued

Map symbol and soil name	Depth		Sand		Silt		Clay		Moist bulk density		Permea- bility (Ksat)		Available water capacity		Linear extensi- bility		Organic matter		Erosion fa	
	In	Pct	Pct	Pct	Pct	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct	Pct	Pct	Pct	Kw	Kf		
NauCh: Nassau, very rocky--	0-7	16-32	50-65	13-18	1.34-1.54	0.6-6					0.13-0.17	0.0-0.1	3.0-5.0	.32	.37					
	7-13	16-47	35-65	10-18	1.29-1.55	0.6-6					0.07-0.12	0.0-0.1	0.0-1.0	.32	.43					
	>13	---	---	---	---	0.00-0.06					0.00-0.00	---	---	---	---					
Manlius, very rocky-	0-9	16-32	50-65	13-18	1.34-1.54	0.6-6					0.10-0.18	0.0-0.1	2.0-8.0	.28	.33					
	9-20	16-47	35-65	10-18	1.29-1.55	0.6-6					0.08-0.12	0.0-0.1	0.0-1.0	.20	.28					
	20-29	16-47	35-65	10-18	1.42-1.70	0.6-6					0.03-0.09	0.0-0.1	0.0-0.0	.20	.33					
	>29	---	---	---	---	0.00-0.06					0.00-0.00	---	---	---	---					
NauDh: Nassau, very rocky--	0-7	16-32	50-65	13-18	1.34-1.54	0.6-6					0.13-0.17	0.0-0.1	3.0-5.0	.32	.37					
	7-13	16-47	35-65	10-18	1.29-1.55	0.6-6					0.07-0.12	0.0-0.1	0.0-1.0	.32	.43					
	>13	---	---	---	---	0.00-0.06					0.00-0.00	---	---	---	---					
Manlius, very rocky-	0-9	16-32	50-65	13-18	1.34-1.54	0.6-6					0.10-0.18	0.0-0.1	2.0-8.0	.28	.33					
	9-20	16-47	35-65	10-18	1.29-1.55	0.6-6					0.08-0.12	0.0-0.1	0.0-1.0	.20	.28					
	20-29	16-47	35-65	10-18	1.42-1.70	0.6-6					0.03-0.09	0.0-0.1	0.0-0.0	.20	.33					
	>29	---	---	---	---	0.00-0.06					0.00-0.00	---	---	---	---					
NauE: Nassau-----	0-1	0-32	0-65	0-18	0.13-0.23	6-20					0.35-0.45	0.0-0.0	70-100	---	---					
	1-2	16-32	50-65	13-18	1.34-1.54	0.6-6					0.13-0.17	0.0-0.1	3.0-5.0	.32	.37					
	2-15	16-47	35-65	10-18	1.29-1.55	0.6-6					0.07-0.12	0.0-0.1	0.0-1.0	.32	.43					
	>15	---	---	---	---	0.00-0.06					0.00-0.00	---	---	---	---					
Rock outcrop-----	---	---	---	---	---	0.00-0.06					0.00-0.00	---	---	---	---					
	---	---	---	---	---	0.00-0.06					0.00-0.00	---	---	---	---					
OpnCh: Oquaga, very rocky--	0-1	0-47	0-50	0-18	0.13-0.23	6-20					0.35-0.45	0.0-0.0	70-100	---	---					
	1-4	35-47	35-50	10-18	1.30-1.52	0.6-2					0.08-0.17	0.0-0.1	2.0-8.0	.20	.32					
	4-20	16-68	17-65	2-18	1.29-1.59	0.6-2					0.04-0.12	0.0-0.1	0.0-2.0	.24	.33					
	20-25	16-76	15-65	2-18	1.29-1.70	0.6-2					0.04-0.12	0.0-0.1	0.0-1.0	.24	.32					
	>25	---	---	---	---	0.00-0.2					0.00-0.00	---	---	---	---					
Lackawanna, very rocky-----	0-2	0-68	0-44	0-17	0.13-0.23	6-20					0.35-0.45	0.0-0.0	70-100	---	---					
	2-3	53-68	17-44	2-17	1.30-1.52	0.6-2					0.10-0.16	0.0-0.1	3.0-6.0	.24	.33					
	3-7	53-68	17-44	2-17	1.29-1.42	0.6-2					0.10-0.16	0.0-0.1	0.0-2.0	.24	.32					
	7-8	53-68	17-44	2-17	1.29-1.59	0.6-2					0.10-0.16	0.0-0.1	2.0-6.0	.24	.33					
	8-16	16-68	17-65	2-18	1.29-1.59	0.6-2					0.10-0.16	0.0-0.1	0.0-2.0	.28	.32					
	16-24	16-68	17-65	2-18	1.29-1.59	0.6-2					0.10-0.16	0.0-0.1	0.0-2.0	.28	.33					
	24-29	16-76	15-65	2-18	1.64-1.98	0.06-0.2					0.06-0.12	0.0-0.1	0.0-0.5	.20	.22					
	29-60	16-76	15-65	2-18	1.64-1.98	0.06-0.2					0.06-0.12	0.0-0.1	0.0-0.5	.20	.22					

Table 28.—Physical Soil Properties—Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion f
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct	Kw
OpnDh: Oquaga, very rocky--	0-1	0-47	0-50	0-18	0.13-0.23	6-20	0.35-0.45	0.0-0.0	70-100	---
	1-4	35-47	35-50	10-18	1.30-1.52	0.6-2	0.08-0.17	0.0-0.1	2.0-8.0	.20
	4-20	16-68	17-65	2-18	1.29-1.59	0.6-2	0.04-0.12	0.0-0.1	0.0-2.0	.24
	20-25	16-76	15-65	2-18	1.29-1.70	0.6-2	0.04-0.12	0.0-0.1	0.0-1.0	.24
	>25	---	---	---	---	0.00-0.2	0.00-0.00	---	---	---
Lackawanna, very rocky-----	0-2	0-68	0-44	0-17	0.13-0.23	6-20	0.35-0.45	0.0-0.0	70-100	---
	2-3	53-68	17-44	2-17	1.30-1.52	0.6-2	0.10-0.16	0.0-0.1	3.0-6.0	.24
	3-7	53-68	17-44	2-17	1.29-1.42	0.6-2	0.10-0.16	0.0-0.1	0.0-2.0	.24
	7-8	53-68	17-44	2-17	1.29-1.59	0.6-2	0.10-0.16	0.0-0.1	2.0-6.0	.24
	8-16	16-68	17-65	2-18	1.29-1.59	0.6-2	0.10-0.16	0.0-0.1	0.0-2.0	.28
	16-24	16-68	17-65	2-18	1.29-1.59	0.6-2	0.10-0.16	0.0-0.1	0.0-2.0	.28
	24-29	16-76	15-65	2-18	1.64-1.98	0.06-0.2	0.06-0.12	0.0-0.1	0.0-0.5	.20
	29-60	16-76	15-65	2-18	1.64-1.98	0.06-0.2	0.06-0.12	0.0-0.1	0.0-0.5	.20
OprC: Oquaga-----	0-1	0-47	0-50	0-18	0.13-0.23	6-20	0.35-0.45	0.0-0.0	70-100	---
	1-4	35-47	35-50	10-18	1.30-1.52	0.6-2	0.08-0.17	0.0-0.1	2.0-8.0	.20
	4-20	16-68	17-65	2-18	1.29-1.59	0.6-2	0.04-0.12	0.0-0.1	0.0-2.0	.24
	20-25	16-76	15-65	2-18	1.29-1.70	0.6-2	0.04-0.12	0.0-0.1	0.0-1.0	.24
	>25	---	---	---	---	0.00-0.2	0.00-0.00	---	---	---
Rock outcrop-----	---	---	---	---	---	0.00-0.2	0.00-0.00	---	---	---
OprE: Oquaga-----	0-1	0-47	0-50	0-18	0.13-0.23	6-20	0.35-0.45	0.0-0.0	70-100	---
	1-4	35-47	35-50	10-18	1.30-1.52	0.6-2	0.08-0.17	0.0-0.1	2.0-8.0	.20
	4-20	16-68	17-65	2-18	1.29-1.59	0.6-2	0.04-0.12	0.0-0.1	0.0-2.0	.24
	20-25	16-76	15-65	2-18	1.29-1.70	0.6-2	0.04-0.12	0.0-0.1	0.0-1.0	.24
	>25	---	---	---	---	0.00-0.2	0.00-0.00	---	---	---
Rock outcrop-----	---	---	---	---	---	0.00-0.2	0.00-0.00	---	---	---
PHG: Pits, sand and gravel-----	---	---	---	---	---	---	---	---	---	---
PohA: Pompton-----	0-2	0-80	0-45	0-18	0.10-0.20	2-6	0.48-0.55	0.0-0.0	60-85	---
	2-4	0-80	0-45	0-18	0.10-0.30	0.6-2	0.35-0.45	0.0-0.0	30-80	---
	4-8	43-80	2-45	7-18	1.15-1.48	2-6	0.12-0.16	0.0-2.9	2.0-4.0	.28
	8-15	43-80	2-45	2-18	1.50-1.65	2-6	0.10-0.14	0.0-2.9	0.0-0.5	.28
	15-20	43-80	2-45	2-18	1.50-1.65	2-6	0.10-0.14	0.0-2.9	0.0-0.5	.28

Table 28.—Physical Soil Properties—Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion fa	
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct	Kw	Kf
PohA: (cont.) Pompton-----											
	20-24	74-85	3-25	1-12	1.50-1.65	6-20	0.10-0.14	0.0-2.9	0.0-0.5	.28	.32
	24-32	43-80	2-45	2-18	1.50-1.65	2-6	0.10-0.14	0.0-2.9	0.0-0.5	.28	.32
	32-40	74-85	3-25	1-12	1.45-1.65	6-20	0.06-0.10	0.0-2.9	0.0-0.5	.17	.20
	40-47	90- 100	0-9	1-8	1.45-1.65	6-20	0.06-0.10	0.0-2.9	0.0-0.0	.17	.20
QY: Pits, quarry-----											
	47-60	90- 100	0-9	1-8	1.45-1.65	6-20	0.06-0.10	0.0-2.9	0.0-0.0	.17	.20
RkrB: Riverhead-----											
	0-13	61-76	15-26	9-14	1.30-1.52	2-6	0.14-0.20	0.0-0.2	1.0-5.0	.28	.28
	13-23	53-76	15-44	2-17	1.45-1.57	2-6	0.09-0.13	0.0-0.1	0.5-2.0	.32	.32
	23-33	53-76	15-44	2-17	1.45-1.57	2-6	0.04-0.13	0.0-0.1	0.2-1.0	.32	.32
	33-41	61-98	2-26	0-14	0.67-1.58	20-100	0.02-0.04	0.0-0.1	0.0-0.2	.17	.20
RnaF: Rock outcrop-----											
	41-60	61-98	2-26	0-14	0.67-1.58	20-100	0.02-0.04	0.0-0.1	0.0-0.2	.17	.20
Arnot-----											
	0-1	0-47	0-50	0-18	0.13-0.23	6-20	0.35-0.45	0.0-0.0	70-100	---	---
	1-2	35-47	35-50	10-18	1.30-1.42	0.6-6	0.10-0.15	0.0-0.2	3.0-6.0	.24	.28
	2-3	53-68	17-44	2-17	1.29-1.42	0.6-6	0.08-0.12	0.0-0.1	0.0-0.5	.17	.24
	3-4	53-68	17-44	2-17	1.29-1.59	0.6-6	0.08-0.12	0.0-0.1	0.0-0.5	.17	.24
Rubble land-----											
	4-12	16-47	35-65	10-18	1.29-1.59	0.6-6	0.08-0.12	0.0-0.1	0.0-0.5	.17	.24
	12-17	16-47	35-65	10-18	1.29-1.59	0.6-6	0.08-0.12	0.0-0.1	0.0-0.5	.17	.24
	>17	---	---	---	---	0.00-0.2	0.00-0.00	---	---	---	---
Rnfc: Rock outcrop-----											
	0-60	---	---	---	---	20-100	0.00-0.10	---	0.0-0.1	---	---
Farmington-----											
	0-1	0-32	0-65	0-18	0.13-0.23	6-20	0.35-0.45	0.0-0.0	70-100	---	---
	1-3	16-32	50-65	13-18	1.34-1.54	0.6-6	0.12-0.22	0.0-0.1	2.0-5.0	.28	.28
	3-9	16-71	17-65	2-18	1.29-1.58	0.6-6	0.08-0.20	0.0-0.1	0.5-1.5	.32	.37
	9-15	16-71	17-65	2-18	1.29-1.58	0.6-6	0.05-0.15	0.0-0.1	0.0-1.0	.24	.32
Galway-----											
	>15	---	---	---	---	0.00-0.6	0.00-0.00	---	---	---	---
	0-2	0-47	0-50	0-18	0.13-0.23	6-20	0.35-0.45	0.0-0.0	70-100	---	---
	2-3	0-47	0-50	0-18	0.13-0.23	2-6	0.35-0.45	0.0-0.0	70-100	---	---
	3-5	35-47	35-50	10-18	1.12-1.30	0.6-2	0.15-0.21	0.0-0.1	2.0-6.0	.32	.32
	5-15	16-68	17-65	2-18	1.29-1.58	0.6-2	0.08-0.19	0.0-0.1	0.0-1.0	.24	.28
	15-24	16-68	17-65	2-18	1.29-1.58	0.6-2	0.04-0.14	0.0-0.1	0.0-1.0	.24	.32
	>24	---	---	---	---	0.00-0.6	0.00-0.00	---	---	---	---





Table 28.--Physical Soil Properties--Continued

Map symbol and soil name	Depth		Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bilty	Organic matter	Erosion	
	In	Pct									Kw	Kf
RokB: Rockaway, thin fragipan-----	0-2	0-47	0-50	0-18	0.13-0.23	6-20		0.35-0.45	0.0-0.0	70-100	---	---
	2-3	35-47	35-50	10-18	1.17-1.40	0.6-2		0.08-0.12	0.0-0.1	2.0-10	.28	.3
	3-6	35-47	35-50	10-18	1.29-1.51	0.6-2		0.09-0.14	0.0-0.1	2.0-8.0	.32	.3
	6-23	35-76	15-50	9-18	1.42-1.70	0.6-2		0.09-0.14	0.0-0.1	0.5-2.0	.32	.3
	23-41	42-76	15-45	9-18	1.64-1.79	0.00-0.2		0.01-0.02	0.0-0.1	0.0-0.5	.24	.2
	41-60	61-85	12-26	3-14	1.20-1.64	0.6-6		0.01-0.02	0.0-0.1	0.0-0.5	.24	.2
Chatfield-----	0-1	0-47	0-50	0-18	0.13-0.23	6-20		0.35-0.45	0.0-0.0	70-100	---	---
	1-3	0-47	0-50	0-18	0.13-0.23	0.6-2		0.35-0.45	0.0-0.0	20-60	---	---
	3-5	35-47	35-50	10-18	1.17-1.40	0.6-6		0.08-0.14	0.0-0.1	2.0-8.0	.20	.2
	5-10	35-76	15-65	9-18	1.29-1.59	0.6-6		0.08-0.18	0.0-0.1	0.5-2.0	.20	.2
	10-24	35-76	15-65	9-18	1.29-1.59	0.6-6		0.08-0.18	0.0-0.1	0.0-0.5	.20	.2
	24-30	16-85	12-65	3-18	1.29-1.59	0.6-6		0.08-0.18	0.0-0.1	0.0-0.5	.20	.2
Rock outcrop-----	>30	---	---	---	---	0.01-20		0.00-0.00	---	---	---	---
	---	---	---	---	---	0.01-20		0.00-0.00	---	---	---	---
RokC: Rockaway, thin fragipan-----	0-2	0-47	0-50	0-18	0.13-0.23	6-20		0.35-0.45	0.0-0.0	70-100	---	---
	2-3	35-47	35-50	10-18	1.17-1.40	0.6-2		0.08-0.12	0.0-0.1	2.0-10	.28	.3
	3-6	35-47	35-50	10-18	1.29-1.51	0.6-2		0.09-0.14	0.0-0.1	2.0-8.0	.32	.3
	6-23	35-76	15-50	9-18	1.42-1.70	0.6-2		0.09-0.14	0.0-0.1	0.5-2.0	.32	.3
	23-41	42-76	15-45	9-18	1.64-1.79	0.00-0.2		0.01-0.02	0.0-0.1	0.0-0.5	.24	.2
	41-60	61-85	12-26	3-14	1.20-1.64	0.6-6		0.01-0.02	0.0-0.1	0.0-0.5	.24	.2
Chatfield-----	0-1	0-47	0-50	0-18	0.13-0.23	6-20		0.35-0.45	0.0-0.0	70-100	---	---
	1-3	0-47	0-50	0-18	0.13-0.23	0.6-2		0.35-0.45	0.0-0.0	20-60	---	---
	3-5	35-47	35-50	10-18	1.17-1.40	0.6-6		0.08-0.14	0.0-0.1	2.0-8.0	.20	.2
	5-10	35-76	15-65	9-18	1.29-1.59	0.6-6		0.08-0.18	0.0-0.1	0.5-2.0	.20	.2
	10-24	35-76	15-65	9-18	1.29-1.59	0.6-6		0.08-0.18	0.0-0.1	0.0-0.5	.20	.2
	24-30	16-85	12-65	3-18	1.29-1.59	0.6-6		0.08-0.18	0.0-0.1	0.0-0.5	.20	.2
Rock outcrop-----	>30	---	---	---	---	0.01-20		0.00-0.00	---	---	---	---
	---	---	---	---	---	0.01-20		0.00-0.00	---	---	---	---
RokD: Rockaway, thin fragipan-----	0-2	0-47	0-50	0-18	0.13-0.23	6-20		0.35-0.45	0.0-0.0	70-100	---	---
	2-3	35-47	35-50	10-18	1.17-1.40	0.6-2		0.08-0.12	0.0-0.1	2.0-10	.28	.3
	3-6	35-47	35-50	10-18	1.29-1.51	0.6-2		0.09-0.14	0.0-0.1	2.0-8.0	.32	.3
	6-23	35-76	15-50	9-18	1.42-1.70	0.6-2		0.09-0.14	0.0-0.1	0.5-2.0	.32	.3
	23-41	42-76	15-45	9-18	1.64-1.79	0.00-0.2		0.01-0.02	0.0-0.1	0.0-0.5	.24	.2
	41-60	61-85	12-26	3-14	1.20-1.64	0.6-6		0.01-0.02	0.0-0.1	0.0-0.5	.24	.2

Table 28.—Physical Soil Properties—Continued

[illegible]

Table 28.—Physical Soil Properties—Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion f
		Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct	Kw
Road: Rockaway, thin fragipan-----	In									
	0-2	0-47	0-50	0-18	0.13-0.23	6-20	0.35-0.45	0.0-0.0	70-100	---
	2-3	35-47	35-50	10-18	1.17-1.40	0.6-2	0.08-0.12	0.0-0.1	2.0-10	.28
	3-6	35-47	35-50	10-18	1.29-1.51	0.6-2	0.09-0.14	0.0-0.1	2.0-8.0	.32
	6-23	35-76	15-50	9-18	1.42-1.70	0.6-2	0.09-0.14	0.0-0.1	0.5-2.0	.32
Urban land, Rockaway thin fragipan substratum-----	23-41	42-76	15-45	9-18	1.64-1.79	0.00-0.2	0.01-0.02	0.0-0.1	0.0-0.5	.24
	41-60	61-85	12-26	3-14	1.20-1.64	0.6-6	0.01-0.02	0.0-0.1	0.0-0.5	.24
ScoA: Scio-----	0-12	---	---	---	---	---	---	---	---	---
	12-23	35-76	15-50	9-18	1.42-1.70	0.6-2	0.09-0.14	0.0-0.1	0.5-2.0	.32
	23-41	42-76	15-45	9-18	1.64-1.79	0.00-0.2	0.01-0.02	0.0-0.1	0.0-0.5	.24
	41-60	61-85	12-26	3-14	1.20-1.64	0.6-6	0.01-0.02	0.0-0.1	0.0-0.5	.24
SwfBc: Swartswood, extremely stony----	0-6	16-32	50-65	13-18	1.46-1.59	0.6-2	0.18-0.21	0.0-2.9	2.0-8.0	.49
	6-13	16-32	50-65	13-18	1.46-1.59	0.6-2	0.18-0.21	0.0-2.9	2.0-8.0	.49
	13-23	16-71	26-65	7-18	1.44-1.59	0.6-2	0.17-0.20	0.0-2.9	0.5-2.0	.24
	23-28	16-71	26-65	7-18	1.44-1.59	0.6-2	0.17-0.20	0.0-2.9	0.1-1.0	.24
	28-50	16-71	26-65	7-18	1.44-1.59	0.6-2	0.17-0.20	0.0-2.9	0.0-0.8	.24
	50-59	16-71	26-65	7-18	1.44-1.59	0.6-2	0.10-0.19	0.0-2.9	0.0-0.5	.28
	59-72	16-71	26-65	7-18	1.44-1.59	0.6-2	0.10-0.19	0.0-2.9	0.0-0.5	.28
SwfCc: Swartswood, extremely stony----	0-1	0-47	0-50	0-18	0.13-0.23	6-20	0.35-0.45	0.0-0.0	70-100	---
	1-2	35-47	35-50	10-18	1.29-1.52	0.6-6	0.08-0.12	0.0-0.2	1.8-5.2	.20
	2-3	53-76	15-44	2-17	1.29-1.51	0.6-6	0.08-0.12	0.0-0.1	0.0-1.0	.20
	3-4	53-76	15-44	2-17	1.29-1.51	0.6-6	0.08-0.12	0.0-0.1	0.5-2.0	.28
	4-21	35-76	15-50	2-18	1.29-1.70	0.6-6	0.08-0.12	0.0-0.1	0.0-1.0	.28
	21-32	35-76	15-50	8-18	1.64-1.98	0.06-0.6	0.06-0.10	0.0-0.1	0.0-0.5	.20
	32-60	35-76	15-50	8-18	1.64-1.98	0.06-0.6	0.06-0.10	0.0-0.1	0.0-0.5	.20
SwfCc: Swartswood, extremely stony----	0-1	0-47	0-50	0-18	0.13-0.23	6-20	0.35-0.45	0.0-0.0	70-100	---
	1-2	35-47	35-50	10-18	1.29-1.52	0.6-6	0.08-0.12	0.0-0.2	1.8-5.2	.20
	2-3	53-76	15-44	2-17	1.29-1.51	0.6-6	0.08-0.12	0.0-0.1	0.0-1.0	.20
	3-4	53-76	15-44	2-17	1.29-1.51	0.6-6	0.08-0.12	0.0-0.1	0.5-2.0	.28
	4-21	35-76	15-50	2-18	1.29-1.70	0.6-6	0.08-0.12	0.0-0.1	0.0-1.0	.28
	21-32	35-76	15-50	8-18	1.64-1.98	0.06-0.6	0.06-0.10	0.0-0.1	0.0-0.5	.20
	32-60	35-76	15-50	8-18	1.64-1.98	0.06-0.6	0.06-0.10	0.0-0.1	0.0-0.5	.20

Table 28.—Physical Soil Properties—Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion f	
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct	Kw	Kf
SwfDc: Swartswood, extremely stony----	0-1	0-47	0-50	0-18	0.13-0.23	6-20	0.35-0.45	0.0-0.0	70-100	---	---
	1-2	35-47	35-50	10-18	1.29-1.52	0.6-6	0.08-0.12	0.0-0.2	1.8-5.2	.20	.20
	2-3	53-76	15-44	2-17	1.29-1.51	0.6-6	0.08-0.12	0.0-0.1	0.0-1.0	.20	.20
	3-4	53-76	15-44	2-17	1.29-1.51	0.6-6	0.08-0.12	0.0-0.1	0.5-2.0	.28	.33
	4-21	35-76	15-50	2-18	1.29-1.70	0.6-6	0.08-0.12	0.0-0.1	0.0-1.0	.28	.33
	21-32	35-76	15-50	8-18	1.64-1.98	0.06-0.6	0.06-0.10	0.0-0.1	0.0-0.5	.20	.22
	32-60	35-76	15-50	8-18	1.64-1.98	0.06-0.6	0.06-0.10	0.0-0.1	0.0-0.5	.20	.22
UccAs: Udifluvents, occasionally flooded-----											
	0-3	43-85	5-45	2-12	1.30-1.50	6-20	0.11-0.17	0.0-2.9	3.0-5.0	.28	.22
	3-16	43-85	5-45	2-12	1.25-1.55	6-20	0.02-0.08	0.0-2.9	0.0-3.0	.28	.22
	16-22	65-90	2-25	2-18	1.25-1.55	2-6	0.02-0.08	0.0-2.9	0.0-3.0	.24	.22
	22-27	65-90	2-25	2-18	1.25-1.55	2-6	0.02-0.08	0.0-2.9	0.0-3.0	.24	.22
	27-32	65-90	2-25	2-18	1.25-1.55	2-6	0.02-0.08	0.0-2.9	0.0-3.0	.24	.22
	32-60	43-85	5-45	2-12	1.25-1.55	6-20	0.02-0.08	0.0-2.9	0.0-3.0	.28	.22
UdaB: Udorthents-----	0-12	35-47	35-50	10-18	1.30-1.52	0.06-0.2	0.00-0.00	0.0-0.2	2.0-4.0	.32	.33
	12-72	35-98	2-50	0-18	0.67-1.58	0.2-20	0.08-0.19	0.0-0.1	0.5-1.0	.28	.33
UdauB: Udorthents-----	0-12	35-47	35-50	10-18	1.30-1.52	0.06-0.2	0.00-0.00	0.0-0.2	2.0-4.0	.32	.33
	12-72	35-98	2-50	0-18	0.67-1.58	0.2-20	0.08-0.19	0.0-0.1	0.5-1.0	.28	.33
Urban land-----	---	---	---	---	---	---	---	---	---	---	---
UnfA: Unadilla-----	0-8	16-32	50-65	13-18	1.46-1.59	0.6-2	0.18-0.21	0.0-0.2	2.0-7.0	.43	.44
	8-14	16-71	26-65	2-18	1.46-1.59	0.6-2	0.18-0.21	0.0-0.2	0.5-4.0	.43	.44
	14-25	16-71	26-65	2-18	1.44-1.59	0.6-2	0.17-0.20	0.0-0.2	0.0-1.0	.49	.44
	25-39	16-71	26-65	2-18	1.44-1.59	0.6-2	0.17-0.20	0.0-0.2	0.0-1.0	.49	.44
	39-60	16-79	20-65	0-18	1.44-1.59	2-20	0.01-0.15	0.0-0.2	0.0-0.5	.28	.22
UnfB: Unadilla-----	0-8	16-32	50-65	13-18	1.46-1.59	0.6-2	0.18-0.21	0.0-0.2	2.0-7.0	.43	.44
	8-14	16-71	26-65	2-18	1.46-1.59	0.6-2	0.18-0.21	0.0-0.2	0.5-4.0	.43	.44
	14-25	16-71	26-65	2-18	1.44-1.59	0.6-2	0.17-0.20	0.0-0.2	0.0-1.0	.49	.44
	25-39	16-71	26-65	2-18	1.44-1.59	0.6-2	0.17-0.20	0.0-0.2	0.0-1.0	.49	.44
	39-60	16-79	20-65	0-18	1.44-1.59	2-20	0.01-0.15	0.0-0.2	0.0-0.5	.28	.22

Table 28.—Physical Soil Properties—Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion fa	
										Kw	Kf
USCHRB: Urban land, Chatfield substratum-----	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct		
	0-12	---	---	---	---	---	---	---	---	---	---
	12-24	35-76	15-65	9-18	1.29-1.59	0.6-6	0.08-0.18	0.0-0.1	0.0-0.5	.20	.24
	24-30	16-85	12-65	3-18	1.29-1.59	0.6-6	0.08-0.18	0.0-0.1	0.0-0.5	.20	.24
	>30	---	---	---	---	0.01-20	0.00-0.00	---	---	---	---
Chatfield-----	0-1	0-47	0-50	0-18	0.13-0.23	6-20	0.35-0.45	0.0-0.0	70-100	---	---
	1-3	0-47	0-50	0-18	0.13-0.23	0.6-2	0.35-0.45	0.0-0.0	20-60	---	---
	3-5	35-47	35-50	10-18	1.17-1.40	0.6-6	0.08-0.14	0.0-0.1	2.0-8.0	.20	.24
	5-10	35-76	15-65	9-18	1.29-1.59	0.6-6	0.08-0.18	0.0-0.1	0.5-2.0	.20	.24
	10-24	35-76	15-65	9-18	1.29-1.59	0.6-6	0.08-0.18	0.0-0.1	0.0-0.5	.20	.24
Rock outcrop-----	24-30	16-85	12-65	3-18	1.29-1.59	0.6-6	0.08-0.18	0.0-0.1	0.0-0.5	.20	.24
	>30	---	---	---	---	0.01-20	0.00-0.00	---	---	---	---
	---	---	---	---	---	0.01-20	0.00-0.00	---	---	---	---
	---	---	---	---	---	0.01-20	0.00-0.00	---	---	---	---
	---	---	---	---	---	---	---	---	---	---	---
USCHRC: Urban land, Chatfield substratum-----	0-12	---	---	---	---	---	---	---	---	---	---
	12-24	35-76	15-65	9-18	1.29-1.59	0.6-6	0.08-0.18	0.0-0.1	0.0-0.5	.20	.24
	24-30	16-85	12-65	3-18	1.29-1.59	0.6-6	0.08-0.18	0.0-0.1	0.0-0.5	.20	.24
	>30	---	---	---	---	0.01-20	0.00-0.00	---	---	---	---
	---	---	---	---	---	---	---	---	---	---	---
Chatfield-----	0-1	0-47	0-50	0-18	0.13-0.23	6-20	0.35-0.45	0.0-0.0	70-100	---	---
	1-3	0-47	0-50	0-18	0.13-0.23	0.6-2	0.35-0.45	0.0-0.0	20-60	---	---
	3-5	35-47	35-50	10-18	1.17-1.40	0.6-6	0.08-0.14	0.0-0.1	2.0-8.0	.20	.24
	5-10	35-76	15-65	9-18	1.29-1.59	0.6-6	0.08-0.18	0.0-0.1	0.5-2.0	.20	.24
	10-24	35-76	15-65	9-18	1.29-1.59	0.6-6	0.08-0.18	0.0-0.1	0.0-0.5	.20	.24
Rock outcrop-----	24-30	16-85	12-65	3-18	1.29-1.59	0.6-6	0.08-0.18	0.0-0.1	0.0-0.5	.20	.24
	>30	---	---	---	---	0.01-20	0.00-0.00	---	---	---	---
	---	---	---	---	---	0.01-20	0.00-0.00	---	---	---	---
	---	---	---	---	---	0.01-20	0.00-0.00	---	---	---	---
	---	---	---	---	---	---	---	---	---	---	---
USCHRD: Urban land, Chatfield substratum-----	0-12	---	---	---	---	---	---	---	---	---	---
	12-24	35-76	15-65	9-18	1.29-1.59	0.6-6	0.08-0.18	0.0-0.1	0.0-0.5	.20	.24
	24-30	16-85	12-65	3-18	1.29-1.59	0.6-6	0.08-0.18	0.0-0.1	0.0-0.5	.20	.24
	>30	---	---	---	---	0.01-20	0.00-0.00	---	---	---	---
	---	---	---	---	---	---	---	---	---	---	---
Chatfield-----	0-1	0-47	0-50	0-18	0.13-0.23	6-20	0.35-0.45	0.0-0.0	70-100	---	---
	1-3	0-47	0-50	0-18	0.13-0.23	0.6-2	0.35-0.45	0.0-0.0	20-60	---	---
	3-5	35-47	35-50	10-18	1.17-1.40	0.6-6	0.08-0.14	0.0-0.1	2.0-8.0	.20	.24
	5-10	35-76	15-65	9-18	1.29-1.59	0.6-6	0.08-0.18	0.0-0.1	0.5-2.0	.20	.24
	---	---	---	---	---	---	---	---	---	---	---

Table 28.—Physical Soil Properties—Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion f	
										Kf	Kw
USCHRD: (cont.) Chatfield-----	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct		
	10-24	35-76	15-65	9-18	1.29-1.59	0.6-6	0.08-0.18	0.0-0.1	0.0-0.5	.20	.2
	24-30	16-85	12-65	3-18	1.29-1.59	0.6-6	0.08-0.18	0.0-0.1	0.0-0.5	.20	.2
	>30	---	---	---	---	0.01-20	0.00-0.00	---	---	---	---
Rock outcrop-----	---	---	---	---	---	0.01-20	0.00-0.00	---	---	---	---
USFARC: Urban land, Farmington substratum-----	0-12	---	---	---	---	---	---	---	---	---	---
	12-15	16-71	17-65	2-18	1.29-1.58	0.6-6	0.05-0.15	0.0-0.1	0.0-1.0	.24	.3
	>15	---	---	---	---	0.00-0.6	0.00-0.00	---	---	---	---
	Farmington-----	0-1	0-32	0-65	0-18	0.13-0.23	6-20	0.35-0.45	0.0-0.0	70-100	---
Rock outcrop-----	1-3	16-32	50-65	13-18	1.34-1.54	0.6-6	0.12-0.22	0.0-0.1	2.0-5.0	.28	.2
	3-9	16-71	17-65	2-18	1.29-1.58	0.6-6	0.08-0.20	0.0-0.1	0.5-1.5	.32	.3
	9-15	16-71	17-65	2-18	1.29-1.58	0.6-6	0.05-0.15	0.0-0.1	0.0-1.0	.24	.3
	>15	---	---	---	---	0.00-0.6	0.00-0.00	---	---	---	---
USFARD: Urban land, Farmington substratum-----	0-12	---	---	---	---	---	---	---	---	---	---
	12-15	16-71	17-65	2-18	1.29-1.58	0.6-6	0.05-0.15	0.0-0.1	0.0-1.0	.24	.3
	>15	---	---	---	---	0.00-0.6	0.00-0.00	---	---	---	---
	Farmington-----	0-1	0-32	0-65	0-18	0.13-0.23	6-20	0.35-0.45	0.0-0.0	70-100	---
Rock outcrop-----	1-3	16-32	50-65	13-18	1.34-1.54	0.6-6	0.12-0.22	0.0-0.1	2.0-5.0	.28	.2
	3-9	16-71	17-65	2-18	1.29-1.58	0.6-6	0.08-0.20	0.0-0.1	0.5-1.5	.32	.3
	9-15	16-71	17-65	2-18	1.29-1.58	0.6-6	0.05-0.15	0.0-0.1	0.0-1.0	.24	.3
	>15	---	---	---	---	0.00-0.6	0.00-0.00	---	---	---	---
USFAWB: Urban land, Farmington substratum-----	0-12	---	---	---	---	---	---	---	---	---	---
	12-15	16-71	17-65	2-18	1.29-1.58	0.6-6	0.05-0.15	0.0-0.1	0.0-1.0	.24	.3
	>15	---	---	---	---	0.00-0.6	0.00-0.00	---	---	---	---
	Farmington-----	0-1	0-32	0-65	0-18	0.13-0.23	6-20	0.35-0.45	0.0-0.0	70-100	---

Table 28.--Physical Soil Properties--Continued

Map symbol and soil name	Depth		Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion f
	In	Pct									
USFAWB: (cont.) Farmington-----	0-1	0-32	0-65	0-18	0.13-0.23	6-20		0.35-0.45	0.0-0.0	70-100	---
	1-3	16-32	50-65	13-18	1.34-1.54	0.6-6		0.12-0.22	0.0-0.1	2.0-5.0	.28
	3-9	16-71	17-65	2-18	1.29-1.58	0.6-6		0.08-0.20	0.0-0.1	0.5-1.5	.32
	9-15	16-71	17-65	2-18	1.29-1.58	0.6-6		0.05-0.15	0.0-0.1	0.0-1.0	.24
	>15	---	---	---	---	0.00-0.6		0.00-0.00	---	---	---
	0-1	0-42	0-49	0-22	0.13-0.23	6-20		0.35-0.45	0.0-0.0	70-100	---
Wassaic----- Urban land, Hazen substratum-----	1-5	32-42	39-49	18-22	1.12-1.30	0.6-2		0.13-0.21	0.0-0.1	2.0-6.0	.37
	5-9	23-68	17-55	8-22	1.29-1.58	0.6-2		0.13-0.21	0.0-0.1	2.0-6.0	.37
	9-17	5-68	17-59	8-35	1.29-1.62	0.6-2		0.09-0.19	0.0-0.1	0.0-2.0	.37
	17-28	5-42	39-59	18-35	1.29-1.62	0.6-2		0.09-0.19	0.0-0.1	0.0-2.0	.37
	>28	---	---	---	---	0.00-0.6		0.00-0.00	---	---	---
	0-12	---	---	---	---	---		---	---	---	---
Hazen----- Urban land, Hazen substratum-----	12-18	61-76	15-26	5-14	1.50-1.57	0.6-6		0.10-0.14	0.0-0.1	0.2-1.0	.28
	18-29	82-98	2-13	0-7	0.67-1.58	6-20		0.02-0.08	0.0-0.1	0.1-0.5	.10
	29-41	82-98	2-13	0-7	0.67-1.58	6-20		0.02-0.08	0.0-0.1	0.0-0.5	.10
	41-60	82-98	2-13	0-7	0.67-1.58	6-20		0.02-0.08	0.0-0.1	0.0-0.5	.10
	0-1	0-47	0-50	0-18	0.13-0.23	6-20		0.35-0.45	0.0-0.0	70-100	---
	1-10	35-47	35-50	10-18	1.30-1.52	0.6-6		0.12-0.18	0.0-0.2	1.8-5.2	.28
Hoosic----- Urban land, Hazen substratum-----	10-18	61-76	15-26	5-14	1.50-1.57	0.6-6		0.10-0.14	0.0-0.1	0.2-1.0	.28
	18-29	82-98	2-13	0-7	0.67-1.58	6-20		0.02-0.08	0.0-0.1	0.1-0.5	.10
	29-41	82-98	2-13	0-7	0.67-1.58	6-20		0.02-0.08	0.0-0.1	0.0-0.5	.10
	41-60	82-98	2-13	0-7	0.67-1.58	6-20		0.02-0.08	0.0-0.1	0.0-0.5	.10
	0-1	0-47	0-50	0-18	0.13-0.23	6-20		0.35-0.45	0.0-0.0	70-100	---
	1-9	35-47	35-50	10-18	1.30-1.52	2-20		0.11-0.16	0.0-0.2	1.8-5.2	.24
USHAZB: Urban land, Hazen substratum-----	9-21	35-76	15-50	5-18	1.45-1.57	2-20		0.05-0.14	0.0-0.1	0.2-1.0	.20
	21-27	82-98	2-13	0-7	0.67-1.58	20-100		0.01-0.05	0.0-0.1	0.0-0.5	.10
	27-37	82-98	2-13	0-7	0.67-1.58	20-100		0.01-0.05	0.0-0.1	0.0-0.5	.10
	37-49	82-98	2-13	0-7	0.67-1.58	20-100		0.01-0.05	0.0-0.1	0.0-0.5	.10
	49-60	82-98	2-13	0-7	0.67-1.58	20-100		0.01-0.05	0.0-0.1	0.0-0.5	.10
	0-12	---	---	---	---	---		---	---	---	---
USHAZB: Urban land, Hazen substratum-----	12-18	61-76	15-26	5-14	1.50-1.57	0.6-6		0.10-0.14	0.0-0.1	0.2-1.0	.28
	18-29	82-98	2-13	0-7	0.67-1.58	6-20		0.02-0.08	0.0-0.1	0.1-0.5	.10
	29-41	82-98	2-13	0-7	0.67-1.58	6-20		0.02-0.08	0.0-0.1	0.0-0.5	.10
	41-60	82-98	2-13	0-7	0.67-1.58	6-20		0.02-0.08	0.0-0.1	0.0-0.5	.10
	0-1	0-47	0-50	0-18	0.13-0.23	6-20		0.35-0.45	0.0-0.0	70-100	---
	1-9	35-47	35-50	10-18	1.30-1.52	2-20		0.11-0.16	0.0-0.2	1.8-5.2	.24



Table 28.--Physical Soil Properties--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion fa	
										Kw	Kf
USHAZB: (cont.) Hazen-----	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct		
	0-1	0-47	0-50	0-18	0.13-0.23	6-20	0.35-0.45	0.0-0.0	70-100	---	---
	1-10	35-47	35-50	10-18	1.30-1.52	0.6-6	0.12-0.18	0.0-0.2	1.8-5.2	.28	.32
	10-18	61-76	15-26	5-14	1.50-1.57	0.6-6	0.10-0.14	0.0-0.1	0.2-1.0	.28	.32
	18-29	82-98	2-13	0-7	0.67-1.58	6-20	0.02-0.08	0.0-0.1	0.1-0.5	.10	.17
	29-41	82-98	2-13	0-7	0.67-1.58	6-20	0.02-0.08	0.0-0.1	0.0-0.5	.10	.17
	41-60	82-98	2-13	0-7	0.67-1.58	6-20	0.02-0.08	0.0-0.1	0.0-0.5	.10	.17
Hoosic-----	0-1	0-47	0-50	0-18	0.13-0.23	6-20	0.35-0.45	0.0-0.0	70-100	---	---
	1-9	35-47	35-50	10-18	1.30-1.52	2-20	0.11-0.16	0.0-0.2	1.8-5.2	.24	.28
	9-21	35-76	15-50	5-18	1.45-1.57	2-20	0.05-0.14	0.0-0.1	0.2-1.0	.20	.22
	21-27	82-98	2-13	0-7	0.67-1.58	20-100	0.01-0.05	0.0-0.1	0.0-0.5	.10	.17
	27-37	82-98	2-13	0-7	0.67-1.58	20-100	0.01-0.05	0.0-0.1	0.0-0.5	.10	.17
	37-49	82-98	2-13	0-7	0.67-1.58	20-100	0.01-0.05	0.0-0.1	0.0-0.5	.10	.17
	49-60	82-98	2-13	0-7	0.67-1.58	20-100	0.01-0.05	0.0-0.1	0.0-0.5	.10	.17
USNAMB: Urban land, Nassau substratum-----	0-12	---	---	---	---	---	---	---	---	---	---
	12-13	16-47	35-65	10-18	1.29-1.55	0.6-6	0.07-0.12	0.0-0.1	0.0-1.0	.32	.43
	>13	---	---	---	---	0.00-0.06	0.00-0.00	---	---	---	---
Nassau-----	0-7	16-32	50-65	13-18	1.34-1.54	0.6-6	0.13-0.17	0.0-0.1	3.0-5.0	.32	.37
	7-13	16-47	35-65	10-18	1.29-1.55	0.6-6	0.07-0.12	0.0-0.1	0.0-1.0	.32	.43
	>13	---	---	---	---	0.00-0.06	0.00-0.00	---	---	---	---
Manlius-----	0-9	16-32	50-65	13-18	1.34-1.54	0.6-6	0.10-0.18	0.0-0.1	2.0-8.0	.28	.32
	9-20	16-47	35-65	10-18	1.29-1.55	0.6-6	0.08-0.12	0.0-0.1	0.0-1.0	.20	.28
	20-29	16-47	35-65	10-18	1.42-1.70	0.6-6	0.03-0.09	0.0-0.1	0.0-0.0	.20	.32
	>29	---	---	---	---	0.00-0.06	0.00-0.00	---	---	---	---
USNAMEC: Urban land, Nassau substratum-----	0-12	---	---	---	---	---	---	---	---	---	---
	12-13	16-47	35-65	10-18	1.29-1.55	0.6-6	0.07-0.12	0.0-0.1	0.0-1.0	.32	.43
	>13	---	---	---	---	0.00-0.06	0.00-0.00	---	---	---	---
Nassau-----	0-7	16-32	50-65	13-18	1.34-1.54	0.6-6	0.13-0.17	0.0-0.1	3.0-5.0	.32	.37
	7-13	16-47	35-65	10-18	1.29-1.55	0.6-6	0.07-0.12	0.0-0.1	0.0-1.0	.32	.43
	>13	---	---	---	---	0.00-0.06	0.00-0.00	---	---	---	---
Manlius-----	0-9	16-32	50-65	13-18	1.34-1.54	0.6-6	0.10-0.18	0.0-0.1	2.0-8.0	.28	.32
	9-20	16-47	35-65	10-18	1.29-1.55	0.6-6	0.08-0.12	0.0-0.1	0.0-1.0	.20	.28
	20-29	16-47	35-65	10-18	1.42-1.70	0.6-6	0.03-0.09	0.0-0.1	0.0-0.0	.20	.32
	>29	---	---	---	---	0.00-0.06	0.00-0.00	---	---	---	---

Table 28.—Physical Soil Properties—Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion f	
										Kw	Kf
USNAMD: Urban land, Nassau substratum-----	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct		
	0-12	---	---	---	---	---	---	---	---	---	---
	12-13	16-47	35-65	10-18	1.29-1.55	0.6-6	0.07-0.12	0.0-0.1	0.0-1.0	.32	.43
	>13	---	---	---	---	0.00-0.06	0.00-0.00	---	---	---	---
Nassau-----	0-7	16-32	50-65	13-18	1.34-1.54	0.6-6	0.13-0.17	0.0-0.1	3.0-5.0	.32	.37
	7-13	16-47	35-65	10-18	1.29-1.55	0.6-6	0.07-0.12	0.0-0.1	0.0-1.0	.32	.43
	>13	---	---	---	---	0.00-0.06	0.00-0.00	---	---	---	---
Manlius-----	0-9	16-32	50-65	13-18	1.34-1.54	0.6-6	0.10-0.18	0.0-0.1	2.0-8.0	.28	.32
	9-20	16-47	35-65	10-18	1.29-1.55	0.6-6	0.08-0.12	0.0-0.1	0.0-1.0	.20	.28
	20-29	16-47	35-65	10-18	1.42-1.70	0.6-6	0.03-0.09	0.0-0.1	0.0-0.0	.20	.32
	>29	---	---	---	---	0.00-0.06	0.00-0.00	---	---	---	---
USWUSB: Urban land, Wurtsboro substratum-----	0-12	---	---	---	---	---	---	---	---	---	---
	12-18	35-76	15-50	2-18	1.29-1.70	0.6-6	0.10-0.14	0.0-0.1	0.0-1.0	.32	.37
	18-24	35-76	15-50	2-18	1.29-1.70	0.6-6	0.10-0.14	0.0-0.1	0.0-1.0	.32	.37
	24-30	35-76	15-50	2-18	1.64-1.98	0.06-0.2	0.08-0.12	0.0-0.1	0.0-0.5	.24	.28
30-60	35-76	15-50	2-18	1.64-1.98	0.06-0.2	0.08-0.12	0.0-0.1	0.0-0.1	0.0-0.5	.24	.28
	0-2	0-47	0-50	0-18	0.13-0.23	6-20	0.35-0.45	0.0-0.0	70-100	---	---
	2-3	35-47	35-50	10-18	1.24-1.68	0.6-6	0.10-0.16	0.0-0.2	1.8-5.2	.24	.32
	3-5	35-68	17-50	2-18	1.29-1.42	0.6-6	0.10-0.16	0.0-0.1	0.0-1.0	.24	.32
5-6	35-68	17-50	2-18	1.29-1.42	0.6-6	0.6-6	0.10-0.16	0.0-0.1	0.5-2.0	.32	.37
	6-18	35-76	15-50	2-18	1.29-1.70	0.6-6	0.10-0.14	0.0-0.1	0.0-1.0	.32	.37
	18-24	35-76	15-50	2-18	1.29-1.70	0.6-6	0.10-0.14	0.0-0.1	0.0-1.0	.32	.37
	24-30	35-76	15-50	2-18	1.64-1.98	0.06-0.2	0.08-0.12	0.0-0.1	0.0-0.5	.24	.28
30-60	35-76	15-50	2-18	1.64-1.98	0.06-0.2	0.08-0.12	0.0-0.1	0.0-0.1	0.0-0.5	.24	.28
	0-1	0-47	0-50	0-18	0.13-0.23	6-20	0.35-0.45	0.0-0.0	70-100	---	---
	1-2	35-47	35-50	10-18	1.29-1.52	0.6-6	0.08-0.12	0.0-0.2	1.8-5.2	.20	.28
	2-3	53-76	15-44	2-17	1.29-1.51	0.6-6	0.08-0.12	0.0-0.1	0.0-1.0	.20	.28
3-4	53-76	15-44	2-17	1.29-1.51	0.6-6	0.6-6	0.08-0.12	0.0-0.1	0.5-2.0	.28	.32
	4-21	35-76	15-50	2-18	1.29-1.70	0.6-6	0.08-0.12	0.0-0.1	0.0-1.0	.28	.32
	21-32	35-76	15-50	8-18	1.64-1.98	0.06-0.6	0.06-0.10	0.0-0.1	0.0-0.5	.20	.24
	32-60	35-76	15-50	8-18	1.64-1.98	0.06-0.6	0.06-0.10	0.0-0.1	0.0-0.5	.20	.24
Swartswood-----	0-1	0-47	0-50	0-18	0.13-0.23	6-20	0.35-0.45	0.0-0.0	70-100	---	---
	1-2	35-47	35-50	10-18	1.29-1.52	0.6-6	0.08-0.12	0.0-0.2	1.8-5.2	.20	.28
	2-3	53-76	15-44	2-17	1.29-1.51	0.6-6	0.08-0.12	0.0-0.1	0.0-1.0	.20	.28
	3-4	53-76	15-44	2-17	1.29-1.51	0.6-6	0.08-0.12	0.0-0.1	0.5-2.0	.28	.32
4-21	35-76	15-50	2-18	1.29-1.70	0.6-6	0.6-6	0.08-0.12	0.0-0.1	0.0-1.0	.28	.32
	21-32	35-76	15-50	8-18	1.64-1.98	0.06-0.6	0.06-0.10	0.0-0.1	0.0-0.5	.20	.24
	32-60	35-76	15-50	8-18	1.64-1.98	0.06-0.6	0.06-0.10	0.0-0.1	0.0-0.5	.20	.24
VepBc: Venango, extremely stony-----	0-1	0-28	0-55	0-22	0.13-0.23	6-20	0.35-0.45	0.0-0.0	70-100	---	---
	1-6	23-28	51-55	21-22	1.03-1.54	0.6-2	0.17-0.20	0.0-0.2	2.0-4.0	.20	.32
	6-16	5-38	44-59	18-30	1.29-1.62	0.6-2	0.16-0.18	0.0-0.1	0.3-0.5	.32	.37
	16-22	5-38	44-59	18-35	1.64-1.86	0.00-0.2	0.06-0.09	0.0-0.1	0.2-0.4	.24	.28
22-34	44-59	18-35	44-59	18-35	1.64-1.86	0.00-0.2	0.06-0.09	0.0-0.1	0.2-0.4	.24	.28
	34-60	5-38	44-59	18-35	1.64-1.86	0.00-0.2	0.08-0.12	0.0-0.1	0.1-0.3	.24	.28



Table 28.—Physical Soil Properties—Continued

Map symbol and soil name	Depth		Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion f	
	In	Pct	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct	Kw	Kf
WabDb: Wallpack, aeolian mantle, very stony-	0-1	0-73	0-44			0.17 0.13-0.23	6-20	0.35-0.45	0.0-0.0	70-100	---	---
	1-2	53-73	17-44			2-17 1.24-1.52	0.6-2	0.15-0.21	0.0-0.2	2.0-4.5	.37	.37
	2-8	53-73	17-44			2-17 1.24-1.52	0.6-2	0.15-0.21	0.0-0.2	0.5-2.0	.37	.37
	8-14	16-68	17-65			2-18 1.29-1.42	0.6-2	0.07-0.20	0.0-0.1	0.0-0.5	.49	.49
	14-21	16-68	17-65			2-18 1.29-1.42	0.6-2	0.07-0.20	0.0-0.1	0.0-0.5	.43	.55
	21-26	16-68	17-65			2-18 1.29-1.42	0.6-2	0.07-0.20	0.0-0.1	0.0-0.5	.37	.55
	26-31	16-68	17-65			2-18 1.29-1.42	0.6-2	0.07-0.20	0.0-0.1	0.0-0.5	.43	.49
	31-36	16-68	17-65			2-18 1.29-1.42	0.6-2	0.07-0.20	0.0-0.1	0.0-0.5	.20	.49
	36-60	16-68	17-65			2-18 1.29-1.42	0.6-2	0.07-0.20	0.0-0.1	0.0-0.5	.37	.49
WacB: Wallpack-----	0-3	16-32	50-65			13-17 1.34-1.54	0.6-6	0.16-0.20	0.0-0.1	1.2-3.2	.37	.43
	3-9	16-32	50-65			13-17 1.34-1.54	0.6-6	0.12-0.20	0.0-0.1	0.8-2.2	.24	.49
	9-16	11-76	15-65			2-17 1.29-1.73	0.6-6	0.12-0.16	0.0-0.1	0.0-0.5	.37	.55
	16-25	11-76	15-65			2-20 1.71-1.98	0.00-0.6	0.07-0.12	0.0-0.1	0.0-0.2	.32	.55
	25-65	11-76	15-65			2-20 1.71-1.98	0.00-0.6	0.07-0.14	0.0-0.1	0.0-0.2	.24	.55
WacBc: Wallpack, extremely stony-----	0-1	0-32	0-65			0-17 0.13-0.23	6-20	0.35-0.45	0.0-0.0	70-100	---	---
	1-2	16-32	50-65			13-17 1.34-1.54	0.6-6	0.18-0.23	0.0-0.1	1.0-20	.24	.32
	2-5	16-76	15-65			9-17 1.16-1.50	0.6-6	0.14-0.20	0.0-0.1	0.5-2.5	.37	.55
	5-18	11-76	15-65			9-17 1.29-1.73	0.6-6	0.14-0.18	0.0-0.1	0.0-0.5	.43	.64
	18-24	11-76	15-65			9-20 1.64-1.98	0.00-0.6	0.08-0.16	0.0-1.5	0.0-0.2	.49	.64
	24-42	11-76	15-65			9-20 1.64-1.98	0.00-0.6	0.08-0.14	0.0-1.5	0.0-0.2	.43	.64
	42-60	11-76	15-65			9-20 1.64-1.98	0.00-0.6	0.08-0.14	0.0-1.5	0.0-0.2	.43	.55
WacC: Wallpack-----	0-3	16-32	50-65			13-17 1.34-1.54	0.6-6	0.16-0.20	0.0-0.1	1.2-3.2	.37	.43
	3-9	16-32	50-65			13-17 1.34-1.54	0.6-6	0.12-0.20	0.0-0.1	0.8-2.2	.24	.49
	9-16	11-76	15-65			2-17 1.29-1.73	0.6-6	0.12-0.16	0.0-0.1	0.0-0.5	.37	.55
	16-25	11-76	15-65			2-20 1.71-1.98	0.00-0.6	0.07-0.12	0.0-0.1	0.0-0.2	.32	.55
	25-65	11-76	15-65			2-20 1.71-1.98	0.00-0.6	0.07-0.14	0.0-0.1	0.0-0.2	.24	.55
WacCc: Wallpack, extremely stony-----	0-1	0-32	0-65			0-17 0.13-0.23	6-20	0.35-0.45	0.0-0.0	70-100	---	---
	1-2	16-32	50-65			13-17 1.34-1.54	0.6-6	0.18-0.23	0.0-0.1	1.0-20	.24	.32
	2-5	16-76	15-65			9-17 1.16-1.50	0.6-6	0.14-0.20	0.0-0.1	0.5-2.5	.37	.55
	5-18	11-76	15-65			9-17 1.29-1.73	0.6-6	0.14-0.18	0.0-0.1	0.0-0.5	.43	.64
	18-24	11-76	15-65			9-20 1.64-1.98	0.00-0.6	0.08-0.16	0.0-1.5	0.0-0.2	.49	.64
	24-42	11-76	15-65			9-20 1.64-1.98	0.00-0.6	0.08-0.14	0.0-1.5	0.0-0.2	.43	.64
	42-60	11-76	15-65			9-20 1.64-1.98	0.00-0.6	0.08-0.14	0.0-1.5	0.0-0.2	.43	.55

Table 28.—Physical Soil Properties—Continued

Map symbol and soil name	Depth		Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion fa	
	In	Pct									Kw	Kf
WacD: Wallpack-----	0-3	16-32	50-65	13-17	1.34-1.54	0.6-6		0.16-0.20	0.0-0.1	1.2-3.2	.37	.43
	3-9	16-32	50-65	13-17	1.34-1.54	0.6-6		0.12-0.20	0.0-0.1	0.8-2.2	.24	.49
	9-16	11-76	15-65	2-17	1.29-1.73	0.6-6		0.12-0.16	0.0-0.1	0.0-0.5	.37	.55
	16-25	11-76	15-65	2-20	1.71-1.98	0.00-0.6		0.07-0.12	0.0-0.1	0.0-0.2	.32	.55
	25-65	11-76	15-65	2-20	1.71-1.98	0.00-0.6		0.07-0.14	0.0-0.1	0.0-0.2	.24	.55
WacDc: Wallpack, extremely stony-----	0-1	0-32	0-65	0-17	0.13-0.23	6-20		0.35-0.45	0.0-0.0	70-100	---	---
	1-2	16-32	50-65	13-17	1.34-1.54	0.6-6		0.18-0.23	0.0-0.1	1.0-20	.24	.32
	2-5	16-76	15-65	9-17	1.16-1.50	0.6-6		0.14-0.20	0.0-0.1	0.5-2.5	.37	.55
	5-18	11-76	15-65	9-17	1.29-1.73	0.6-6		0.14-0.18	0.0-0.1	0.0-0.5	.43	.64
	18-24	11-76	15-65	9-20	1.64-1.98	0.00-0.6		0.08-0.16	0.0-1.5	0.0-0.2	.49	.64
	24-42	11-76	15-65	9-20	1.64-1.98	0.00-0.6		0.08-0.14	0.0-1.5	0.0-0.2	.43	.64
WATER: Water-----	42-60	11-76	15-65	9-20	1.64-1.98	0.00-0.6		0.08-0.14	0.0-1.5	0.0-0.2	.43	.55
	---	---	---	---	---	---		---	---	---	---	---
WecBc: Wellsboro, extremely stony-----	0-8	16-47	50-65	13-18	1.34-1.54	0.6-2		0.35-0.45	0.0-0.1	3.0-5.0	.24	.33
	8-15	16-47	35-65	10-18	1.29-1.59	0.6-2		0.10-0.16	0.0-0.1	0.2-2.5	.20	.28
	15-24	16-47	35-65	10-18	1.29-1.59	0.6-2		0.10-0.16	0.0-0.1	0.0-0.5	.20	.28
	24-29	16-47	35-65	10-18	1.29-1.59	0.6-2		0.10-0.16	0.0-0.1	0.0-0.5	.20	.28
	29-37	16-76	15-65	9-18	1.64-1.98	0.06-0.2		0.06-0.12	0.0-0.1	0.0-0.5	.20	.22
	37-60	16-76	15-65	9-18	1.64-1.98	0.06-0.2		0.06-0.12	0.0-0.1	0.0-0.5	.20	.22
WecCc: Wellsboro, extremely stony-----	0-8	16-47	50-65	13-18	1.34-1.54	0.6-2		0.35-0.45	0.0-0.1	3.0-5.0	.24	.32
	8-15	16-47	35-65	10-18	1.29-1.59	0.6-2		0.10-0.16	0.0-0.1	0.2-2.5	.20	.28
	15-24	16-47	35-65	10-18	1.29-1.59	0.6-2		0.10-0.16	0.0-0.1	0.0-0.5	.20	.28
	24-29	16-47	35-65	10-18	1.29-1.59	0.6-2		0.10-0.16	0.0-0.1	0.0-0.5	.20	.28
	29-37	16-76	15-65	9-18	1.64-1.98	0.06-0.2		0.06-0.12	0.0-0.1	0.0-0.5	.20	.22
	37-60	16-76	15-65	9-18	1.64-1.98	0.06-0.2		0.06-0.12	0.0-0.1	0.0-0.5	.20	.22
WumBc: Wurtsboro, extremely stony-----	0-2	0-47	0-50	0-18	0.13-0.23	6-20		0.35-0.45	0.0-0.0	70-100	---	---
	2-3	35-47	35-50	10-18	1.24-1.68	0.6-6		0.10-0.16	0.0-0.2	1.8-5.2	.24	.32
	3-5	35-68	17-50	2-18	1.29-1.42	0.6-6		0.10-0.16	0.0-0.1	0.0-1.0	.24	.33
	5-6	35-68	17-50	2-18	1.29-1.42	0.6-6		0.10-0.16	0.0-0.1	0.5-2.0	.32	.33
	6-18	35-76	15-50	2-18	1.29-1.70	0.6-6		0.10-0.14	0.0-0.1	0.0-1.0	.32	.33
	18-24	35-76	15-50	2-18	1.29-1.70	0.6-6		0.10-0.14	0.0-0.1	0.0-1.0	.32	.33
	24-30	35-76	15-50	2-18	1.64-1.98	0.06-0.2		0.08-0.12	0.0-0.1	0.0-0.5	.24	.28
	30-60	35-76	15-50	2-18	1.64-1.98	0.06-0.2		0.08-0.12	0.0-0.1	0.0-0.5	.24	.28

Table 28.—Physical Soil Properties—Continued

Map symbol and soil name	Depth		Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion	
	In	Pct									Kf	Kw
WusBc: Wurtsboro, extremely stony-----												
	0-2	0-68	0-44	0-17	0.13-0.23	6-20		0.35-0.45	0.0-0.0	70-100	---	---
	2-3	53-68	17-44	2-17	1.24-1.68	0.6-6		0.10-0.16	0.0-0.2	1.8-5.2	.24	.3
	3-4	35-68	17-50	2-18	1.29-1.42	0.6-6		0.10-0.16	0.0-0.1	0.0-1.0	.24	.3
	4-6	35-68	17-50	2-18	1.29-1.42	0.6-6		0.10-0.16	0.0-0.1	0.5-2.0	.32	.3
	6-18	35-76	15-50	2-18	1.29-1.70	0.6-6		0.10-0.14	0.0-0.1	0.0-1.0	.32	.3
	18-24	35-76	15-50	2-18	1.29-1.70	0.6-6		0.10-0.14	0.0-0.1	0.0-1.0	.32	.3
	24-33	35-76	15-50	2-18	1.64-1.98	0.06-0.2		0.08-0.12	0.0-0.1	0.0-0.5	.24	.2
	33-60	35-76	15-50	2-18	1.64-1.98	0.06-0.2		0.08-0.12	0.0-0.1	0.0-0.5	.24	.2
Swartswood, extremely stony-----	0-1	0-47	0-50	0-18	0.13-0.23	6-20		0.35-0.45	0.0-0.0	70-100	---	---
	1-2	35-47	35-50	10-18	1.29-1.52	0.6-6		0.08-0.12	0.0-0.2	1.8-5.2	.20	.2
	2-3	53-76	15-44	2-17	1.29-1.51	0.6-6		0.08-0.12	0.0-0.1	0.0-1.0	.20	.2
	3-4	53-76	15-44	2-17	1.29-1.51	0.6-6		0.08-0.12	0.0-0.1	0.5-2.0	.28	.3
	4-21	35-76	15-50	2-18	1.29-1.70	0.6-6		0.08-0.12	0.0-0.1	0.0-1.0	.28	.3
	21-32	35-76	15-50	8-18	1.64-1.98	0.06-0.6		0.06-0.10	0.0-0.1	0.0-0.5	.20	.2
	32-60	35-76	15-50	8-18	1.64-1.98	0.06-0.6		0.06-0.10	0.0-0.1	0.0-0.5	.20	.2
WusCc: Wurtsboro, extremely stony-----	0-2	0-68	0-44	0-17	0.13-0.23	6-20		0.35-0.45	0.0-0.0	70-100	---	---
	2-3	53-68	17-44	2-17	1.24-1.68	0.6-6		0.10-0.16	0.0-0.2	1.8-5.2	.24	.3
	3-4	35-68	17-50	2-18	1.29-1.42	0.6-6		0.10-0.16	0.0-0.1	0.0-1.0	.24	.3
	4-6	35-68	17-50	2-18	1.29-1.42	0.6-6		0.10-0.16	0.0-0.1	0.5-2.0	.32	.3
	6-18	35-76	15-50	2-18	1.29-1.70	0.6-6		0.10-0.14	0.0-0.1	0.0-1.0	.32	.3
	18-24	35-76	15-50	2-18	1.29-1.70	0.6-6		0.10-0.14	0.0-0.1	0.0-1.0	.32	.3
	24-33	35-76	15-50	2-18	1.64-1.98	0.06-0.2		0.08-0.12	0.0-0.1	0.0-0.5	.24	.2
	33-60	35-76	15-50	2-18	1.64-1.98	0.06-0.2		0.08-0.12	0.0-0.1	0.0-0.5	.24	.2
Swartswood, extremely stony-----	0-1	0-47	0-50	0-18	0.13-0.23	6-20		0.35-0.45	0.0-0.0	70-100	---	---
	1-2	35-47	35-50	10-18	1.29-1.52	0.6-6		0.08-0.12	0.0-0.2	1.8-5.2	.20	.2
	2-3	53-76	15-44	2-17	1.29-1.51	0.6-6		0.08-0.12	0.0-0.1	0.0-1.0	.20	.2
	3-4	53-76	15-44	2-17	1.29-1.51	0.6-6		0.08-0.12	0.0-0.1	0.5-2.0	.28	.3
	4-21	35-76	15-50	2-18	1.29-1.70	0.6-6		0.08-0.12	0.0-0.1	0.0-1.0	.28	.3
	21-32	35-76	15-50	8-18	1.64-1.98	0.06-0.6		0.06-0.10	0.0-0.1	0.0-0.5	.20	.2
	32-60	35-76	15-50	8-18	1.64-1.98	0.06-0.6		0.06-0.10	0.0-0.1	0.0-0.5	.20	.2



Table 29.—Chemical Soil Properties

(Absence of an entry indicates that data were not estimated.)

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbon- ate	Gypsum	Salinity	Sodium adsorp- tion ratio
	Inches	meq/100 g	meq/100 g	pH	Pct	Pct	mmhos/cm	
<b>AhbBc:</b>								
Alden, extremely stony-----	0-2	85-94	32-37	4.5-6.0	0	0	0	0
	2-7	3.5-8.7	3.1-8.0	4.5-7.3	0	0	0	0
	7-14	4.6-9.0	0.1-12	5.1-7.3	0	0	0	0
	14-28	4.6-9.0	0.1-12	5.6-7.3	0	0	0	0
	28-43	4.6-9.0	0.1-12	5.6-7.3	0	0	0	0
	43-60	4.6-9.0	0.1-12	6.1-8.4	0	0	0	0
<b>AhcBc:</b>								
Alden, gneiss till substratum, extremely stony-----	0-1	85-94	32-37	4.5-6.0	0	0	0	0
	1-9	4.2-10	3.6-9.5	4.5-7.3	0	0	0	0
	9-23	4.6-9.0	0.1-12	5.1-7.3	0	0	0	0
	23-35	4.6-9.0	0.1-12	5.6-7.3	0	0	0	0
	35-60	4.6-9.0	0.1-12	6.1-8.4	0	0	0	0
<b>AruCh:</b>								
Arnot, very rocky----	0-1	85-94	32-37	4.5-6.0	0	0	0	0
	1-2	5.9-13	3.1-11	3.5-6.0	0	0	0	0
	2-3	2.3-4.4	1.1-1.8	3.5-6.0	0	0	0	0
	3-4	7.8-15	3.6-5.9	3.5-6.0	0	0	0	0
	4-12	4.6-6.5	0.1-5.7	3.5-6.0	0	0	0	0
	12-17	4.6-6.5	0.1-5.7	3.5-6.0	0	0	0	0
	>17	---	---	---	---	---	---	---
<b>Lordstown, very rocky</b>	0-1	85-94	32-37	4.5-6.0	0	0	0	0
	1-2	5.9-13	3.1-11	4.5-6.0	0	0	0	0
	2-3	2.3-4.4	1.1-1.8	4.5-6.0	0	0	0	0
	3-5	4.6-6.5	0.1-5.7	4.5-6.0	0	0	0	0
	5-17	4.6-6.5	0.1-5.7	4.5-6.0	0	0	0	0
	17-22	4.6-6.5	0.1-5.7	4.5-6.0	0	0	0	0
	22-36	2.3-6.5	0.1-5.7	5.1-6.0	0	0	0	0
	>36	---	---	---	---	---	---	---
<b>ArvD:</b>								
Arnot-----	0-1	85-94	32-37	4.5-6.0	0	0	0	0
	1-2	5.9-13	3.1-11	3.5-6.0	0	0	0	0
	2-3	2.3-4.4	1.1-1.8	3.5-6.0	0	0	0	0
	3-4	7.8-15	3.6-5.9	3.5-6.0	0	0	0	0
	4-12	4.6-6.5	0.1-5.7	3.5-6.0	0	0	0	0
	12-17	4.6-6.5	0.1-5.7	3.5-6.0	0	0	0	0
	>17	---	---	---	---	---	---	---
<b>Lordstown-----</b>	0-1	85-94	32-37	4.5-6.0	0	0	0	0
	1-2	5.9-13	3.1-11	4.5-6.0	0	0	0	0
	2-3	2.3-4.4	1.1-1.8	4.5-6.0	0	0	0	0
	3-5	4.6-6.5	0.1-5.7	4.5-6.0	0	0	0	0
	5-17	4.6-6.5	0.1-5.7	4.5-6.0	0	0	0	0
	17-22	4.6-6.5	0.1-5.7	4.5-6.0	0	0	0	0
	22-36	2.3-6.5	0.1-5.7	5.1-6.0	0	0	0	0
	>36	---	---	---	---	---	---	---
<b>Rock outcrop-----</b>	---	---	---	---	---	---	---	---
<b>ArvE:</b>								
Arnot-----	0-1	85-94	32-37	4.5-6.0	0	0	0	0
	1-2	5.9-13	3.1-11	3.5-6.0	0	0	0	0
	2-3	2.3-4.4	1.1-1.8	3.5-6.0	0	0	0	0
	3-4	7.8-15	3.6-5.9	3.5-6.0	0	0	0	0



Table 29.—Chemical Soil Properties—Continued

[illegible]

Table 29.—Chemical Soil Properties—Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbon- ate	Gypsum	Salinity	Sodium adsorp- tion ratio
	Inches	meq/100 g	meq/100 g	pH	Pct	Pct	mmhos/cm	
ChkE:								
Chatfield-----	0-1	85-94	32-37	4.5-6.0	0	0	0	0
	1-3	110-156	33-38	4.5-6.0	0	0	0	0
	3-5	11-13	3.3-5.5	4.5-6.0	0	0	0	0
	5-10	5.0-20	3.0-5.0	4.5-6.0	0	0	0	0
	10-24	4.0-15	3.0-5.0	4.5-6.0	0	0	0	0
	24-30	4.0-15	0.0-2.5	4.5-6.0	0	0	0	0
	>30	---	---	---	---	---	---	---
Hollis-----	0-1	85-94	32-37	4.5-6.0	0	0	0	0
	1-3	110-156	33-38	4.5-6.0	0	0	0	0
	3-6	11-13	3.3-5.5	4.5-6.0	0	0	0	0
	6-8	5.0-20	3.0-5.0	4.5-6.0	0	0	0	0
	8-16	4.0-15	3.0-5.0	4.5-6.0	0	0	0	0
	>16	---	---	---	---	---	---	---
Rock outcrop-----	---	---	---	---	---	---	---	---
ChwBc:								
Chippewa, extremely stony-----	0-2	85-94	32-37	4.5-6.0	0	0	0	0
	2-4	11-15	4.4-11	4.5-6.5	0	0	0	0
	4-8	6.0-9.4	0.4-9.8	4.5-6.5	0	0	0	0
	8-13	4.6-15	0.9-12	4.5-6.5	0	0	0	0
	13-21	1.2-8.8	0.1-10	5.1-7.3	0	0	0	0
	21-29	1.2-8.8	0.1-10	5.1-7.3	0	0	0	0
	29-34	1.2-8.8	0.1-10	5.6-8.4	0	0	0	0
	34-60	1.2-8.8	0.1-10	5.6-8.4	0	0	0	0
CorA:								
Colonie-----	0-2	3.5-7.7	0.0-3.3	5.1-6.5	0	0	0	0
	2-11	3.5-7.7	0.0-3.3	5.1-6.5	0	0	0	0
	11-24	0.6-3.8	0.0-8.7	5.1-6.5	0	0	0	0
	24-40	0.6-3.8	0.0-8.7	5.1-7.3	0	0	0	0
	40-62	0.6-3.8	0.0-8.7	5.1-7.3	0	0	0	0
CorB:								
Colonie-----	0-2	3.5-7.7	0.0-3.3	5.1-6.5	0	0	0	0
	2-11	3.5-7.7	0.0-3.3	5.1-6.5	0	0	0	0
	11-24	0.6-3.8	0.0-8.7	5.1-6.5	0	0	0	0
	24-40	0.6-3.8	0.0-8.7	5.1-7.3	0	0	0	0
	40-62	0.6-3.8	0.0-8.7	5.1-7.3	0	0	0	0
DefAr:								
Delaware, rarely flooded-----	0-1	85-94	32-37	5.1-6.5	0	0	0	0
	1-4	3.4-13	0.3-9.3	5.1-6.5	0	0	0	0
	4-11	3.4-13	0.3-9.3	5.1-6.5	0	0	0	0
	11-20	2.2-7.0	0.3-4.1	5.1-6.5	0	0	0	0
	20-33	2.2-7.0	0.3-4.1	5.1-6.5	0	0	0	0
	33-41	2.2-7.0	0.3-4.1	5.1-6.5	0	0	0	0
	41-56	1.3-3.7	1.0-4.2	5.1-6.5	0	0	0	0
	56-60	1.3-3.7	1.0-4.2	5.1-6.5	0	0	0	0
DefBr:								
Delaware, rarely flooded-----	0-1	85-94	32-37	5.1-6.5	0	0	0	0
	1-4	3.4-13	0.3-9.3	5.1-6.5	0	0	0	0
	4-11	3.4-13	0.3-9.3	5.1-6.5	0	0	0	0
	11-20	2.2-7.0	0.3-4.1	5.1-6.5	0	0	0	0
	20-33	2.2-7.0	0.3-4.1	5.1-6.5	0	0	0	0
	33-41	2.2-7.0	0.3-4.1	5.1-6.5	0	0	0	0
	41-56	1.3-3.7	1.0-4.2	5.1-6.5	0	0	0	0
	56-60	1.3-3.7	1.0-4.2	5.1-6.5	0	0	0	0

Table 29.—Chemical Soil Properties—Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbon- ate	Gypsum	Salinity	Sodium adsorp- tion ratio
	Inches	meq/100 g	meq/100 g	pH	Pct	Pct	mmhos/cm	
<b>FaxC:</b>								
Farmington-----	0-1	85-94	32-37	4.5-6.0	0	0	0	0
	1-3	11-11	3.1-11	5.1-7.3	0	0	0	0
	3-9	4.4-15	0.0-4.8	5.1-7.8	0	0	0	0
	9-15	4.4-15	0.0-4.8	5.1-7.8	0	0	0	0
	>15	---	---	---	---	---	---	---
Rock outcrop-----	---	---	---	---	---	---	---	---
<b>FdwB:</b>								
Farmington-----	0-1	85-94	32-37	4.5-6.0	0	0	0	0
	1-3	11-11	3.1-11	5.1-7.3	0	0	0	0
	3-9	4.4-15	0.0-4.8	5.1-7.8	0	0	0	0
	9-15	4.4-15	0.0-4.8	5.1-7.8	0	0	0	0
	>15	---	---	---	---	---	---	---
<b>Wassaic-----</b>								
	0-1	85-94	32-37	4.5-6.0	0	0	0	0
	1-5	9.5-14	0.0-4.5	5.6-7.3	0	0	0	0
	5-9	4.4-15	0.0-4.8	5.6-7.3	0	0	0	0
	9-17	4.4-15	0.0-9.8	5.6-7.3	0	0	0	0
	17-28	4.4-15	0.0-9.8	5.6-7.3	0	0	0	0
	>28	---	---	---	0	0	0	0
Rock outcrop-----	---	---	---	---	---	---	---	---
<b>FmhAs:</b>								
Fluvaquents, occasionally flooded	0-5	10-20	4.5-16	5.1-6.5	0	0	0	0
	5-12	10-20	5.0-13	5.1-6.5	0	0	0	0
	12-18	5.0-15	7.8-16	5.1-7.3	0	0	0	0
	18-24	5.0-15	7.8-16	5.1-7.3	0	0	0	0
	24-60	5.0-10	2.3-7.9	5.1-7.3	0	0	0	0
<b>FrdAb:</b>								
Fredon, very stony---	0-1	85-94	32-37	4.5-6.0	0	0	0	0
	1-8	3.5-8.7	3.1-8.0	5.1-7.3	0	0	0	0
	8-14	2.3-6.5	0.1-5.7	5.1-7.3	0	0	0	0
	14-18	2.3-6.5	0.1-5.7	5.1-7.3	0	0	0	0
	18-23	2.3-6.5	0.1-5.7	5.1-7.3	0	0	0	0
	23-31	0.6-3.6	0.0-3.2	5.6-8.4	0	0	0	0
	31-36	0.6-3.6	0.0-3.2	5.6-8.4	0	0	0	0
	36-45	0.6-3.6	0.0-3.2	5.6-8.4	0	0	0	0
	45-55	0.6-3.6	0.0-3.2	5.6-8.4	0	0	0	0
	55-60	0.6-3.6	0.0-3.2	5.6-8.4	0	0	0	0
<b>Halsey, very stony---</b>								
	0-1	85-94	32-37	4.5-6.0	0	0	0	0
	1-5	3.5-8.7	3.1-8.0	5.1-7.3	0	0	0	0
	5-11	3.5-8.7	3.1-8.0	5.1-7.3	0	0	0	0
	11-20	2.3-6.5	0.1-5.7	5.1-7.3	0	0	0	0
	20-25	0.6-3.6	0.0-3.2	5.6-8.4	0	0	0	0
	25-35	0.6-3.6	0.0-3.2	5.6-8.4	0	0	0	0
	35-49	0.6-3.6	0.0-3.2	5.6-8.4	0	0	0	0
	49-56	0.6-3.6	0.0-3.2	5.6-8.4	0	0	0	0
	56-60	0.6-3.6	0.0-3.2	5.6-8.4	0	0	0	0
<b>GawEh:</b>								
Galway, very rocky---	0-2	85-94	32-37	4.5-6.0	0	0	0	0
	2-3	85-94	32-37	4.5-6.0	0	0	0	0
	3-5	9.5-14	0.0-4.5	5.0-7.3	0	0	0	0
	5-15	4.4-15	0.0-4.8	5.1-7.8	0	0	0	0
	15-24	4.4-15	0.0-4.8	5.1-7.8	0	0	0	0
	>24	---	---	---	---	---	---	---

Table 29.—Chemical Soil Properties—Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbon- ate	Gypsum	Salinity	Sodium adsorp- tion ratio
	Inches	meq/100 g	meq/100 g	pH	Pct	Pct	mmhos/cm	
<b>HdxAb:</b>								
Hazen, very stony----	0-1	85-94	32-37	4.5-6.0	0	0	0	0
	1-10	5.9-9.0	3.1-8.4	5.6-6.5	0	0	0	0
	10-18	5.4-7.4	2.3-3.9	5.6-6.5	0	0	0	0
	18-29	0.6-3.6	0.0-3.2	6.1-7.8	0	0	0	0
	29-41	0.6-3.6	0.0-3.2	6.1-7.8	0	0	0	0
	41-60	0.6-3.6	0.0-3.2	6.1-7.8	0	0	0	0
<b>Hoosic, very stony---</b>	0-1	85-94	32-37	4.5-6.0	0	0	0	0
	1-9	5.9-9.0	3.1-8.4	4.5-5.5	0	0	0	0
	9-21	5.4-7.4	2.3-3.9	4.5-5.5	0	0	0	0
	21-27	0.6-3.6	0.0-3.2	4.5-6.0	0	0	0	0
	27-37	0.6-3.6	0.0-3.2	4.5-6.0	0	0	0	0
	37-49	0.6-3.6	0.0-3.2	4.5-6.0	0	0	0	0
	49-60	0.6-3.6	0.0-3.2	4.5-6.0	0	0	0	0
<b>HdxBb:</b>								
Hazen, very stony----	0-1	85-94	32-37	4.5-6.0	0	0	0	0
	1-10	5.9-9.0	3.1-8.4	5.6-6.5	0	0	0	0
	10-18	5.4-7.4	2.3-3.9	5.6-6.5	0	0	0	0
	18-29	0.6-3.6	0.0-3.2	6.1-7.8	0	0	0	0
	29-41	0.6-3.6	0.0-3.2	6.1-7.8	0	0	0	0
	41-60	0.6-3.6	0.0-3.2	6.1-7.8	0	0	0	0
<b>Hoosic, very stony---</b>	0-1	85-94	32-37	4.5-6.0	0	0	0	0
	1-9	5.9-9.0	3.1-8.4	4.5-5.5	0	0	0	0
	9-21	5.4-7.4	2.3-3.9	4.5-5.5	0	0	0	0
	21-27	0.6-3.6	0.0-3.2	4.5-6.0	0	0	0	0
	27-37	0.6-3.6	0.0-3.2	4.5-6.0	0	0	0	0
	37-49	0.6-3.6	0.0-3.2	4.5-6.0	0	0	0	0
	49-60	0.6-3.6	0.0-3.2	4.5-6.0	0	0	0	0
<b>HhmBc:</b>								
Hibernia, extremely stony-----	0-2	85-94	32-37	4.5-6.0	0	0	0	0
	2-4	11-13	3.1-5.5	3.5-5.5	0	0	0	0
	4-11	3.0-5.0	1.1-2.7	4.5-5.5	0	0	0	0
	11-19	3.0-5.0	1.1-2.7	4.5-5.5	0	0	0	0
	19-29	1.2-4.3	0.6-2.2	4.5-5.5	0	0	0	0
	29-35	0.0-4.3	0.0-2.2	4.5-5.5	0	0	0	0
	35-60	0.0-4.3	0.0-2.2	4.5-5.5	0	0	0	0
<b>HkrgBb:</b>								
Hinckley, very stony-	0-1	85-94	32-37	4.5-6.0	0	0	0	0
	1-3	5.7-9.1	2.7-9.2	3.5-6.0	0	0	0	0
	3-9	0.6-3.6	0.0-2.6	3.5-6.0	0	0	0	0
	9-19	0.6-3.6	0.0-2.6	3.5-6.0	0	0	0	0
	19-60	0.6-3.6	0.0-3.2	3.5-6.0	0	0	0	0
<b>HkrgCb:</b>								
Hinckley, very stony-	0-1	85-94	32-37	4.5-6.0	0	0	0	0
	1-3	5.7-9.1	2.7-9.2	3.5-6.0	0	0	0	0
	3-9	0.6-3.6	0.0-2.6	3.5-6.0	0	0	0	0
	9-19	0.6-3.6	0.0-2.6	3.5-6.0	0	0	0	0
	19-60	0.6-3.6	0.0-3.2	3.5-6.0	0	0	0	0
<b>HncD:</b>								
Hollis-----	0-1	85-94	32-37	4.5-6.0	0	0	0	0
	1-3	110-156	33-38	4.5-6.0	0	0	0	0
	3-6	11-13	3.3-5.5	4.5-6.0	0	0	0	0
	6-8	5.0-20	3.0-5.0	4.5-6.0	0	0	0	0
	8-16	4.0-15	3.0-5.0	4.5-6.0	0	0	0	0
	>16	---	---	---	---	---	---	---

Table 29.—Chemical Soil Properties—Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbon- ate	Gypsum	Salinity	Sodium adsorp- tion ratio
	Inches	meq/100 g	meq/100 g	pH	Pct	Pct	mmhos/cm	
HncD: (cont.)								
Rock outcrop-----	---	---	---	---	---	---	---	---
Chatfield-----	0-1	85-94	32-37	4.5-6.0	0	0	0	0
	1-3	110-156	33-38	4.5-6.0	0	0	0	0
	3-5	11-13	3.3-5.5	4.5-6.0	0	0	0	0
	5-10	5.0-20	3.0-5.0	4.5-6.0	0	0	0	0
	10-24	4.0-15	3.0-5.0	4.5-6.0	0	0	0	0
	24-30	4.0-15	0.0-2.5	4.5-6.0	0	0	0	0
	>30	---	---	---	---	---	---	---
HonCb:								
Hoosic, very stony---	0-1	85-94	32-37	4.5-6.0	0	0	0	0
	1-9	5.9-9.0	3.1-8.4	4.5-5.5	0	0	0	0
	9-21	5.4-7.4	2.3-3.9	4.5-5.5	0	0	0	0
	21-27	0.6-3.6	0.0-3.2	4.5-6.0	0	0	0	0
	27-37	0.6-3.6	0.0-3.2	4.5-6.0	0	0	0	0
	37-49	0.6-3.6	0.0-3.2	4.5-6.0	0	0	0	0
	49-60	0.6-3.6	0.0-3.2	4.5-6.0	0	0	0	0
Hazen, very stony----	0-1	85-94	32-37	4.5-6.0	0	0	0	0
	1-10	5.9-9.0	3.1-8.4	5.6-6.5	0	0	0	0
	10-18	5.4-7.4	2.3-3.9	5.6-6.5	0	0	0	0
	18-29	0.6-3.6	0.0-3.2	6.1-7.8	0	0	0	0
	29-41	0.6-3.6	0.0-3.2	6.1-7.8	0	0	0	0
	41-60	0.6-3.6	0.0-3.2	6.1-7.8	0	0	0	0
HopEb:								
Hoosic, very stony---	0-1	85-94	32-37	4.5-6.0	0	0	0	0
	1-9	5.9-9.0	3.1-8.4	4.5-5.5	0	0	0	0
	9-21	5.4-7.4	2.3-3.9	4.5-5.5	0	0	0	0
	21-27	0.6-3.6	0.0-3.2	4.5-6.0	0	0	0	0
	27-37	0.6-3.6	0.0-3.2	4.5-6.0	0	0	0	0
	37-49	0.6-3.6	0.0-3.2	4.5-6.0	0	0	0	0
	49-60	0.6-3.6	0.0-3.2	4.5-6.0	0	0	0	0
Otisville, very stony	0-1	85-94	32-37	4.5-6.0	0	0	0	0
	1-2	5.7-9.1	2.7-9.2	3.5-6.5	0	0	0	0
	2-7	0.6-3.8	0.0-3.2	3.5-6.5	0	0	0	0
	7-11	0.6-3.6	0.0-3.2	3.5-6.5	0	0	0	0
	11-19	0.6-3.6	0.0-3.2	3.5-6.5	0	0	0	0
	19-31	0.6-3.6	0.0-3.2	4.5-6.0	0	0	0	0
	31-43	0.6-3.6	0.0-3.2	4.5-6.0	0	0	0	0
	43-60	0.6-3.6	0.0-3.2	4.5-6.0	0	0	0	0
LacBc:								
Lackawanna, extremely stony-----	0-2	85-94	32-37	4.5-6.0	0	0	0	0
	2-3	5.9-13	3.1-11	3.5-5.5	0	0	0	0
	3-7	2.3-4.4	1.1-1.8	3.5-5.5	0	0	0	0
	7-8	7.8-15	3.6-20	3.5-5.5	0	0	0	0
	8-16	4.6-6.5	0.1-5.7	3.5-5.5	0	0	0	0
	16-24	4.6-6.5	0.1-5.7	3.5-5.5	0	0	0	0
	24-29	1.2-4.3	0.0-2.3	3.5-5.5	0	0	0	0
	29-60	1.2-4.3	0.0-2.3	3.5-5.5	0	0	0	0
LacCc:								
Lackawanna, extremely stony-----	0-2	85-94	32-37	4.5-6.0	0	0	0	0
	2-3	5.9-13	3.1-11	3.5-5.5	0	0	0	0
	3-7	2.3-4.4	1.1-1.8	3.5-5.5	0	0	0	0
	7-8	7.8-15	3.6-20	3.5-5.5	0	0	0	0
	8-16	4.6-6.5	0.1-5.7	3.5-5.5	0	0	0	0

Table 29.—Chemical Soil Properties—Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbon- ate	Gypsum	Salinity	Sodium adsorp- tion ratio
	Inches	meq/100 g	meq/100 g	pH	Pct	Pct	mmhos/cm	
LacCc: (cont.) Lackawanna, extremely stony-----	16-24	4.6-6.5	0.1-5.7	3.5-5.5	0	0	0	0
	24-29	1.2-4.3	0.0-2.3	3.5-5.5	0	0	0	0
	29-60	1.2-4.3	0.0-2.3	3.5-5.5	0	0	0	0
LacDc: Lackawanna, extremely stony-----	0-2	85-94	32-37	4.5-6.0	0	0	0	0
	2-3	5.9-13	3.1-11	3.5-5.5	0	0	0	0
	3-7	2.3-4.4	1.1-1.8	3.5-5.5	0	0	0	0
	7-8	7.8-15	3.6-20	3.5-5.5	0	0	0	0
	8-16	4.6-6.5	0.1-5.7	3.5-5.5	0	0	0	0
	16-24	4.6-6.5	0.1-5.7	3.5-5.5	0	0	0	0
	24-29	1.2-4.3	0.0-2.3	3.5-5.5	0	0	0	0
	29-60	1.2-4.3	0.0-2.3	3.5-5.5	0	0	0	0
LorB: Lordstown-----	0-1	85-94	32-37	4.5-6.0	0	0	0	0
	1-2	5.9-13	3.1-11	4.5-6.0	0	0	0	0
	2-3	2.3-4.4	1.1-1.8	4.5-6.0	0	0	0	0
	3-5	4.6-6.5	0.1-5.7	4.5-6.0	0	0	0	0
	5-17	4.6-6.5	0.1-5.7	4.5-6.0	0	0	0	0
	17-22	4.6-6.5	0.1-5.7	4.5-6.0	0	0	0	0
	22-36	2.3-6.5	0.1-5.7	5.1-6.0	0	0	0	0
	>36	---	---	---	---	---	---	---
Wallpack-----	0-3	3.5-11	3.1-5.4	5.1-6.5	0	0	0	0
	3-9	3.5-11	3.1-5.4	5.1-6.5	0	0	0	0
	9-16	1.7-15	1.3-4.8	5.1-6.5	0	0	0	0
	16-25	1.2-8.8	0.6-5.3	5.6-7.3	0	0	0	0
	25-65	1.2-8.8	0.6-5.3	5.6-7.8	0	0	0	0
LorC: Lordstown-----	0-1	85-94	32-37	4.5-6.0	0	0	0	0
	1-2	5.9-13	3.1-11	4.5-6.0	0	0	0	0
	2-3	2.3-4.4	1.1-1.8	4.5-6.0	0	0	0	0
	3-5	4.6-6.5	0.1-5.7	4.5-6.0	0	0	0	0
	5-17	4.6-6.5	0.1-5.7	4.5-6.0	0	0	0	0
	17-22	4.6-6.5	0.1-5.7	4.5-6.0	0	0	0	0
	22-36	2.3-6.5	0.1-5.7	5.1-6.0	0	0	0	0
	>36	---	---	---	---	---	---	---
Wallpack-----	0-3	3.5-11	3.1-5.4	5.1-6.5	0	0	0	0
	3-9	3.5-11	3.1-5.4	5.1-6.5	0	0	0	0
	9-16	1.7-15	1.3-4.8	5.1-6.5	0	0	0	0
	16-25	1.2-8.8	0.6-5.3	5.6-7.3	0	0	0	0
	25-65	1.2-8.8	0.6-5.3	5.6-7.8	0	0	0	0
LorCh: Lordstown, very rocky	0-1	85-94	32-37	4.5-6.0	0	0	0	0
	1-2	5.9-13	3.1-11	4.5-6.0	0	0	0	0
	2-3	2.3-4.4	1.1-1.8	4.5-6.0	0	0	0	0
	3-5	4.6-6.5	0.1-5.7	4.5-6.0	0	0	0	0
	5-17	4.6-6.5	0.1-5.7	4.5-6.0	0	0	0	0
	17-22	4.6-6.5	0.1-5.7	4.5-6.0	0	0	0	0
	22-36	2.3-6.5	0.1-5.7	5.1-6.0	0	0	0	0
	>36	---	---	---	---	---	---	---

Table 29.—Chemical Soil Properties—Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbon- ate	Gypsum	Salinity	Sodium adsorp- tion ratio
	Inches	meq/100 g	meq/100 g	pH	Pct	Pct	mmhos/cm	
LorCh: (cont.)								
Wallpack, very rocky-	0-1	85-94	32-37	4.5-6.0	0	0	0	0
	1-2	8.0-35	6.0-20	5.1-6.5	0	0	0	0
	2-5	6.0-9.4	0.0-3.9	5.1-6.5	0	0	0	0
	5-18	1.7-15	1.3-4.8	5.1-6.5	0	0	0	0
	18-24	1.2-8.8	0.6-5.3	5.6-7.3	0	0	0	0
	24-42	1.2-8.8	0.6-5.3	5.6-7.3	0	0	0	0
	42-60	1.2-8.8	0.6-5.3	5.6-7.8	0	0	0	0
LorD:								
Lordstown-----	0-1	85-94	32-37	4.5-6.0	0	0	0	0
	1-2	5.9-13	3.1-11	4.5-6.0	0	0	0	0
	2-3	2.3-4.4	1.1-1.8	4.5-6.0	0	0	0	0
	3-5	4.6-6.5	0.1-5.7	4.5-6.0	0	0	0	0
	5-17	4.6-6.5	0.1-5.7	4.5-6.0	0	0	0	0
	17-22	4.6-6.5	0.1-5.7	4.5-6.0	0	0	0	0
	22-36	2.3-6.5	0.1-5.7	5.1-6.0	0	0	0	0
	>36	---	---	---	---	---	---	---
Wallpack-----	0-3	3.5-11	3.1-5.4	5.1-6.5	0	0	0	0
	3-9	3.5-11	3.1-5.4	5.1-6.5	0	0	0	0
	9-16	1.7-15	1.3-4.8	5.1-6.5	0	0	0	0
	16-25	1.2-8.8	0.6-5.3	5.6-7.3	0	0	0	0
	25-65	1.2-8.8	0.6-5.3	5.6-7.8	0	0	0	0
LorDh:								
Lordstown, very rocky	0-1	85-94	32-37	4.5-6.0	0	0	0	0
	1-2	5.9-13	3.1-11	4.5-6.0	0	0	0	0
	2-3	2.3-4.4	1.1-1.8	4.5-6.0	0	0	0	0
	3-5	4.6-6.5	0.1-5.7	4.5-6.0	0	0	0	0
	5-17	4.6-6.5	0.1-5.7	4.5-6.0	0	0	0	0
	17-22	4.6-6.5	0.1-5.7	4.5-6.0	0	0	0	0
	22-36	2.3-6.5	0.1-5.7	5.1-6.0	0	0	0	0
	>36	---	---	---	---	---	---	---
Wallpack, very rocky-	0-1	85-94	32-37	4.5-6.0	0	0	0	0
	1-2	8.0-35	6.0-20	5.1-6.5	0	0	0	0
	2-5	6.0-9.4	0.0-3.9	5.1-6.5	0	0	0	0
	5-18	1.7-15	1.3-4.8	5.1-6.5	0	0	0	0
	18-24	1.2-8.8	0.6-5.3	5.6-7.3	0	0	0	0
	24-42	1.2-8.8	0.6-5.3	5.6-7.3	0	0	0	0
	42-60	1.2-8.8	0.6-5.3	5.6-7.8	0	0	0	0
MabEh:								
Manlius, very rocky--	0-1	85-94	32-37	4.5-6.0	0	0	0	0
	1-2	3.5-8.7	3.1-5.4	3.5-7.3	0	0	0	0
	2-18	4.6-6.5	2.5-2.7	3.5-6.5	0	0	0	0
	18-27	4.6-6.5	2.5-2.7	4.5-6.5	0	0	0	0
	>27	---	---	---	---	---	---	---
Nassau, very rocky---	0-1	85-94	32-37	4.5-6.0	0	0	0	0
	1-2	3.5-8.7	3.1-5.4	4.5-7.3	0	0	0	0
	2-15	4.6-6.5	2.5-2.7	4.5-6.5	0	0	0	0
	>15	---	---	---	---	---	---	---
NauBh:								
Nassau, very rocky---	0-7	3.5-8.7	3.1-5.4	4.5-7.3	0	0	0	0
	7-13	4.6-6.5	2.5-2.7	4.5-6.5	0	0	0	0
	>13	---	---	---	---	---	---	---

Table 29.—Chemical Soil Properties—Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbon- ate	Gypsum	Salinity	Sodium adsorp- tion ratio
	Inches	meq/100 g	meq/100 g	pH	Pct	Pct	mmhos/cm	
NauBh: (cont.)								
Manlius, very rocky---	0-9	3.5-8.7	3.1-5.4	3.5-7.3	0	0	0	0
	9-20	4.6-6.5	2.5-2.7	3.5-6.5	0	0	0	0
	20-29	4.6-6.5	2.5-2.7	4.5-6.5	0	0	0	0
	>29	---	---	---	---	---	---	---
NauCh:								
Nassau, very rocky---	0-7	3.5-8.7	3.1-5.4	4.5-7.3	0	0	0	0
	7-13	4.6-6.5	2.5-2.7	4.5-6.5	0	0	0	0
	>13	---	---	---	---	---	---	---
Manlius, very rocky---	0-9	3.5-8.7	3.1-5.4	3.5-7.3	0	0	0	0
	9-20	4.6-6.5	2.5-2.7	3.5-6.5	0	0	0	0
	20-29	4.6-6.5	2.5-2.7	4.5-6.5	0	0	0	0
	>29	---	---	---	---	---	---	---
NauDh:								
Nassau, very rocky---	0-7	3.5-8.7	3.1-5.4	4.5-7.3	0	0	0	0
	7-13	4.6-6.5	2.5-2.7	4.5-6.5	0	0	0	0
	>13	---	---	---	---	---	---	---
Manlius, very rocky---	0-9	3.5-8.7	3.1-5.4	3.5-7.3	0	0	0	0
	9-20	4.6-6.5	2.5-2.7	3.5-6.5	0	0	0	0
	20-29	4.6-6.5	2.5-2.7	4.5-6.5	0	0	0	0
	>29	---	---	---	---	---	---	---
NavE:								
Nassau-----	0-1	85-94	32-37	4.5-6.0	0	0	0	0
	1-2	3.5-8.7	3.1-5.4	4.5-7.3	0	0	0	0
	2-15	4.6-6.5	2.5-2.7	4.5-6.5	0	0	0	0
	>15	---	---	---	---	---	---	---
Rock outcrop-----	---	---	---	---	---	---	---	---
OpnCh:								
Oquaga, very rocky---	0-1	85-94	32-37	4.5-6.0	0	0	0	0
	1-4	5.9-13	3.1-11	3.5-5.5	0	0	0	0
	4-20	4.6-6.5	0.1-5.7	3.5-5.5	0	0	0	0
	20-25	2.3-6.5	0.1-5.7	3.5-5.5	0	0	0	0
	>25	---	---	---	---	---	---	---
Lackawanna, very rocky-----	0-2	85-94	32-37	4.5-6.0	0	0	0	0
	2-3	5.9-13	3.1-11	3.5-5.5	0	0	0	0
	3-7	2.3-4.4	1.1-1.8	3.5-5.5	0	0	0	0
	7-8	7.8-15	3.6-20	3.5-5.5	0	0	0	0
	8-16	4.6-6.5	0.1-5.7	3.5-5.5	0	0	0	0
	16-24	4.6-6.5	0.1-5.7	3.5-5.5	0	0	0	0
	24-29	1.2-4.3	0.0-2.3	3.5-5.5	0	0	0	0
	29-60	1.2-4.3	0.0-2.3	3.5-5.5	0	0	0	0
OpnDh:								
Oquaga, very rocky---	0-1	85-94	32-37	4.5-6.0	0	0	0	0
	1-4	5.9-13	3.1-11	3.5-5.5	0	0	0	0
	4-20	4.6-6.5	0.1-5.7	3.5-5.5	0	0	0	0
	20-25	2.3-6.5	0.1-5.7	3.5-5.5	0	0	0	0
	>25	---	---	---	---	---	---	---
Lackawanna, very rocky-----	0-2	85-94	32-37	4.5-6.0	0	0	0	0
	2-3	5.9-13	3.1-11	3.5-5.5	0	0	0	0
	3-7	2.3-4.4	1.1-1.8	3.5-5.5	0	0	0	0
	7-8	7.8-15	3.6-20	3.5-5.5	0	0	0	0



Table 29.—Chemical Soil Properties—Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbon- ate	Gypsum	Salinity	Sodium adsorp- tion ratio
	Inches	meq/100 g	meq/100 g	pH	Pct	Pct	mmhos/cm	
OpnDh: (cont.)								
Lackawanna, very rocky-----	8-16	4.6-6.5	0.1-5.7	3.5-5.5	0	0	0	0
	16-24	4.6-6.5	0.1-5.7	3.5-5.5	0	0	0	0
	24-29	1.2-4.3	0.0-2.3	3.5-5.5	0	0	0	0
	29-60	1.2-4.3	0.0-2.3	3.5-5.5	0	0	0	0
OprC:								
Oquaga-----	0-1	85-94	32-37	4.5-6.0	0	0	0	0
	1-4	5.9-13	3.1-11	3.5-5.5	0	0	0	0
	4-20	4.6-6.5	0.1-5.7	3.5-5.5	0	0	0	0
	20-25	2.3-6.5	0.1-5.7	3.5-5.5	0	0	0	0
	>25	---	---	---	---	---	---	---
Rock outcrop-----	---	---	---	---	---	---	---	---
OprE:								
Oquaga-----	0-1	85-94	32-37	4.5-6.0	0	0	0	0
	1-4	5.9-13	3.1-11	3.5-5.5	0	0	0	0
	4-20	4.6-6.5	0.1-5.7	3.5-5.5	0	0	0	0
	20-25	2.3-6.5	0.1-5.7	3.5-5.5	0	0	0	0
	>25	---	---	---	---	---	---	---
Rock outcrop-----	---	---	---	---	---	---	---	---
PHG:								
Pits, sand and gravel	---	---	---	---	---	---	---	---
PohA:								
Pompton-----	0-2	135-196	101-147	5.1-5.5	0	0	0	0
	2-4	68-185	51-139	5.1-5.5	0	0	0	0
	4-8	6.2-14	4.7-10	4.5-5.5	0	0	0	0
	8-15	0.5-5.6	0.4-4.2	5.1-5.5	0	0	0	0
	15-20	0.5-5.6	0.4-4.2	5.1-5.5	0	0	0	0
	20-24	0.2-4.1	0.2-3.1	5.1-5.5	0	0	0	0
	24-32	0.5-5.6	0.4-4.2	5.1-5.5	0	0	0	0
	32-40	0.2-4.1	0.2-3.1	4.5-5.5	0	0	0	0
	40-47	0.2-2.0	0.2-1.5	4.5-5.5	0	0	0	0
	47-60	0.2-2.0	0.2-1.5	4.5-5.5	0	0	0	0
QY:								
Pits, quarry-----	---	---	---	---	---	---	---	---
RkrB:								
Riverhead-----	0-13	5.9-9.0	3.1-8.4	3.5-5.5	0	0	0	0
	13-23	5.4-7.4	2.3-3.9	3.5-5.5	0	0	0	0
	23-33	5.4-7.4	2.3-3.9	3.5-5.5	0	0	0	0
	33-41	0.6-3.6	0.0-3.2	3.5-5.5	0	0	0	0
	41-60	0.6-3.6	0.0-3.2	3.5-5.5	0	0	0	0
RnaF:								
Rock outcrop-----	---	---	---	---	---	---	---	---
Arnot-----	0-1	85-94	32-37	4.5-6.0	0	0	0	0
	1-2	5.9-13	3.1-11	3.5-6.0	0	0	0	0
	2-3	2.3-4.4	1.1-1.8	3.5-6.0	0	0	0	0
	3-4	7.8-15	3.6-5.9	3.5-6.0	0	0	0	0
	4-12	4.6-6.5	0.1-5.7	3.5-6.0	0	0	0	0
	12-17	4.6-6.5	0.1-5.7	3.5-6.0	0	0	0	0
	>17	---	---	---	---	---	---	---
Rubble land-----	0-60	---	---	---	---	---	---	---

Table 29.—Chemical Soil Properties—Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbon- ate	Gypsum	Salinity	Sodium adsorp- tion ratio
	Inches	meq/100 g	meq/100 g	pH	Pct	Pct	mmhos/cm	
<b>RnfC:</b>								
Rock outcrop-----	---	---	---	---	---	---	---	---
Farmington-----	0-1	85-94	32-37	4.5-6.0	0	0	0	0
	1-3	11-11	3.1-11	5.1-7.3	0	0	0	0
	3-9	4.4-15	0.0-4.8	5.1-7.8	0	0	0	0
	9-15	4.4-15	0.0-4.8	5.1-7.8	0	0	0	0
	>15	---	---	---	---	---	---	---
Galway-----	0-2	85-94	32-37	4.5-6.0	0	0	0	0
	2-3	85-94	32-37	4.5-6.0	0	0	0	0
	3-5	9.5-14	0.0-4.5	5.0-7.3	0	0	0	0
	5-15	4.4-15	0.0-4.8	5.1-7.8	0	0	0	0
	15-24	4.4-15	0.0-4.8	5.1-7.8	0	0	0	0
	>24	---	---	---	---	---	---	---
<b>RnfD:</b>								
Rock outcrop-----	---	---	---	---	---	---	---	---
Farmington-----	0-1	85-94	32-37	4.5-6.0	0	0	0	0
	1-3	11-11	3.1-11	5.1-7.3	0	0	0	0
	3-9	4.4-15	0.0-4.8	5.1-7.8	0	0	0	0
	9-15	4.4-15	0.0-4.8	5.1-7.8	0	0	0	0
	>15	---	---	---	---	---	---	---
Galway-----	0-2	85-94	32-37	4.5-6.0	0	0	0	0
	2-3	85-94	32-37	4.5-6.0	0	0	0	0
	3-5	9.5-14	0.0-4.5	5.0-7.3	0	0	0	0
	5-15	4.4-15	0.0-4.8	5.1-7.8	0	0	0	0
	15-24	4.4-15	0.0-4.8	5.1-7.8	0	0	0	0
	>24	---	---	---	---	---	---	---
<b>RoefBc:</b>								
Rockaway, thin fragipan, extremely stony-----	0-2	85-94	32-37	4.5-6.0	0	0	0	0
	2-3	11-13	3.1-5.5	4.5-5.5	0	0	0	0
	3-6	8.5-11	3.3-4.1	4.5-5.5	0	0	0	0
	6-23	3.0-5.0	1.1-2.7	4.5-5.5	0	0	0	0
	23-41	1.2-4.3	0.6-2.2	4.5-5.5	0	0	0	0
	41-60	0.0-4.3	0.0-2.2	4.5-5.5	0	0	0	0
<b>RoefCc:</b>								
Rockaway, thin fragipan, extremely stony-----	0-2	85-94	32-37	4.5-6.0	0	0	0	0
	2-3	11-13	3.1-5.5	4.5-5.5	0	0	0	0
	3-6	8.5-11	3.3-4.1	4.5-5.5	0	0	0	0
	6-23	3.0-5.0	1.1-2.7	4.5-5.5	0	0	0	0
	23-41	1.2-4.3	0.6-2.2	4.5-5.5	0	0	0	0
	41-60	0.0-4.3	0.0-2.2	4.5-5.5	0	0	0	0
<b>RoefDc:</b>								
Rockaway, thin fragipan, extremely stony-----	0-2	85-94	32-37	4.5-6.0	0	0	0	0
	2-3	11-13	3.1-5.5	4.5-5.5	0	0	0	0
	3-6	8.5-11	3.3-4.1	4.5-5.5	0	0	0	0
	6-23	3.0-5.0	1.1-2.7	4.5-5.5	0	0	0	0
	23-41	1.2-4.3	0.6-2.2	4.5-5.5	0	0	0	0
	41-60	0.0-4.3	0.0-2.2	4.5-5.5	0	0	0	0

Table 29.—Chemical Soil Properties—Continued

[illegible]

Table 29.—Chemical Soil Properties—Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbon- ate	Gypsum	Salinity	Sodium adsorp- tion ratio
	Inches	meq/100 g	meq/100 g	pH	Pct	Pct	mmhos/cm	
RooB: Rockaway, thin fragipan-----	0-2	85-94	32-37	4.5-6.0	0	0	0	0
	2-3	11-13	3.1-5.5	4.5-5.5	0	0	0	0
	3-6	8.5-11	3.3-4.1	4.5-5.5	0	0	0	0
	6-23	3.0-5.0	1.1-2.7	4.5-5.5	0	0	0	0
	23-41	1.2-4.3	0.6-2.2	4.5-5.5	0	0	0	0
	41-60	0.0-4.3	0.0-2.2	4.5-5.5	0	0	0	0
Urban land, Rockaway thin fragipan substratum-----	0-12	---	---	---	---	---	---	---
	12-23	3.0-5.0	1.1-2.7	4.5-5.5	0	0	0	0
	23-41	1.2-4.3	0.6-2.2	4.5-5.5	0	0	0	0
	41-60	0.0-4.3	0.0-2.2	4.5-5.5	0	0	0	0
RooC: Rockaway, thin fragipan-----	0-2	85-94	32-37	4.5-6.0	0	0	0	0
	2-3	11-13	3.1-5.5	4.5-5.5	0	0	0	0
	3-6	8.5-11	3.3-4.1	4.5-5.5	0	0	0	0
	6-23	3.0-5.0	1.1-2.7	4.5-5.5	0	0	0	0
	23-41	1.2-4.3	0.6-2.2	4.5-5.5	0	0	0	0
	41-60	0.0-4.3	0.0-2.2	4.5-5.5	0	0	0	0
Urban land, Rockaway thin fragipan substratum-----	0-12	---	---	---	---	---	---	---
	12-23	3.0-5.0	1.1-2.7	4.5-5.5	0	0	0	0
	23-41	1.2-4.3	0.6-2.2	4.5-5.5	0	0	0	0
	41-60	0.0-4.3	0.0-2.2	4.5-5.5	0	0	0	0
RooD: Rockaway, thin fragipan-----	0-2	85-94	32-37	4.5-6.0	0	0	0	0
	2-3	11-13	3.1-5.5	4.5-5.5	0	0	0	0
	3-6	8.5-11	3.3-4.1	4.5-5.5	0	0	0	0
	6-23	3.0-5.0	1.1-2.7	4.5-5.5	0	0	0	0
	23-41	1.2-4.3	0.6-2.2	4.5-5.5	0	0	0	0
	41-60	0.0-4.3	0.0-2.2	4.5-5.5	0	0	0	0
Urban land, Rockaway thin fragipan substratum-----	0-12	---	---	---	---	---	---	---
	12-23	3.0-5.0	1.1-2.7	4.5-5.5	0	0	0	0
	23-41	1.2-4.3	0.6-2.2	4.5-5.5	0	0	0	0
	41-60	0.0-4.3	0.0-2.2	4.5-5.5	0	0	0	0
ScoA: Scio-----	0-6	8.3-10	6.6-8.7	3.5-6.0	0	0	0	0
	6-13	8.3-10	6.6-8.7	3.5-6.0	0	0	0	0
	13-23	7.1-14	4.6-10	3.5-6.0	0	0	0	0
	23-28	7.1-14	4.6-10	3.5-6.0	0	0	0	0
	28-50	7.1-14	4.6-10	3.5-6.0	0	0	0	0
	50-59	8.7-12	6.1-12	5.1-7.8	0	0	0	0
	59-72	8.7-12	6.1-12	5.1-7.8	0	0	0	0

Table 29.—Chemical Soil Properties—Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbon- ate	Gypsum	Salinity	Sodium adsorp- tion ratio
	Inches	meq/100 g	meq/100 g	pH	Pct	Pct	mmhos/cm	
<b>SwfBc:</b>								
Swartswood, extremely stony-----	0-1	85-94	32-37	4.5-6.0	0	0	0	0
	1-2	5.9-13	3.1-11	3.5-5.5	0	0	0	0
	2-3	2.3-5.0	1.1-1.8	3.5-5.5	0	0	0	0
	3-4	7.8-15	3.6-5.9	3.5-5.5	0	0	0	0
	4-21	2.3-6.5	0.1-5.7	3.5-5.5	0	0	0	0
	21-32	1.2-4.3	0.0-2.3	3.5-5.5	0	0	0	0
	32-60	1.2-4.3	0.0-2.3	3.5-5.5	0	0	0	0
<b>SwfCc:</b>								
Swartswood, extremely stony-----	0-1	85-94	32-37	4.5-6.0	0	0	0	0
	1-2	5.9-13	3.1-11	3.5-5.5	0	0	0	0
	2-3	2.3-5.0	1.1-1.8	3.5-5.5	0	0	0	0
	3-4	7.8-15	3.6-5.9	3.5-5.5	0	0	0	0
	4-21	2.3-6.5	0.1-5.7	3.5-5.5	0	0	0	0
	21-32	1.2-4.3	0.0-2.3	3.5-5.5	0	0	0	0
	32-60	1.2-4.3	0.0-2.3	3.5-5.5	0	0	0	0
<b>SwfDc:</b>								
Swartswood, extremely stony-----	0-1	85-94	32-37	4.5-6.0	0	0	0	0
	1-2	5.9-13	3.1-11	3.5-5.5	0	0	0	0
	2-3	2.3-5.0	1.1-1.8	3.5-5.5	0	0	0	0
	3-4	7.8-15	3.6-5.9	3.5-5.5	0	0	0	0
	4-21	2.3-6.5	0.1-5.7	3.5-5.5	0	0	0	0
	21-32	1.2-4.3	0.0-2.3	3.5-5.5	0	0	0	0
	32-60	1.2-4.3	0.0-2.3	3.5-5.5	0	0	0	0
<b>UccAs:</b>								
Udifluvents, occasionally flooded	0-3	---	1.6-8.2	4.5-6.0	0	0	0	0
	3-16	1.4-9.9	1.1-7.4	5.0-6.0	0	0	0	0
	16-22	1.4-14	1.1-11	5.0-6.0	0	0	0	0
	22-27	1.4-14	1.1-11	5.0-6.0	0	0	0	0
	27-32	1.4-14	1.1-11	5.0-6.0	0	0	0	0
	32-60	1.4-9.9	1.1-7.4	5.0-6.0	0	0	0	0
<b>UdaB:</b>								
Udorthents-----	0-12	5.9-20	3.1-8.4	5.0-6.0	0	0	0	0
	12-72	0.6-3.6	0.0-3.2	5.1-5.5	0	0	0	0
<b>UdauB:</b>								
Udorthents-----	0-12	5.9-20	3.1-8.4	5.0-6.0	0	0	0	0
	12-72	0.6-3.6	0.0-3.2	5.1-5.5	0	0	0	0
<b>Urban land-----</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>---</b>
<b>UnfA:</b>								
Unadilla-----	0-8	8.3-10	6.6-8.7	4.5-7.3	0	0	0	0
	8-14	8.3-10	6.6-8.7	4.5-7.3	0	0	0	0
	14-25	7.1-14	4.6-10	4.5-7.3	0	0	0	0
	25-39	7.1-14	4.6-10	4.5-7.3	0	0	0	0
	39-60	8.7-12	6.1-12	4.5-7.3	0	0	0	0
<b>UnfB:</b>								
Unadilla-----	0-8	8.3-10	6.6-8.7	4.5-7.3	0	0	0	0
	8-14	8.3-10	6.6-8.7	4.5-7.3	0	0	0	0
	14-25	7.1-14	4.6-10	4.5-7.3	0	0	0	0
	25-39	7.1-14	4.6-10	4.5-7.3	0	0	0	0
	39-60	8.7-12	6.1-12	4.5-7.3	0	0	0	0

Table 29.—Chemical Soil Properties—Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbon- ate	Gypsum	Salinity	Sodium adsorp- tion ratio
	Inches	meq/100 g	meq/100 g	pH	Pct	Pct	mmhos/cm	
USCHRB: Urban land, Chatfield substratum-----	0-12	---	---	---	---	---	---	---
	12-24	4.0-15	3.0-5.0	4.5-6.0	0	0	0	0
	24-30	4.0-15	0.0-2.5	4.5-6.0	0	0	0	0
	>30	---	---	---	---	---	---	---
Chatfield-----	0-1	85-94	32-37	4.5-6.0	0	0	0	0
	1-3	110-156	33-38	4.5-6.0	0	0	0	0
	3-5	11-13	3.3-5.5	4.5-6.0	0	0	0	0
	5-10	5.0-20	3.0-5.0	4.5-6.0	0	0	0	0
	10-24	4.0-15	3.0-5.0	4.5-6.0	0	0	0	0
	24-30	4.0-15	0.0-2.5	4.5-6.0	0	0	0	0
	>30	---	---	---	---	---	---	---
Rock outcrop-----	---	---	---	---	---	---	---	---
USCHRC: Urban land, Chatfield substratum-----	0-12	---	---	---	---	---	---	---
	12-24	4.0-15	3.0-5.0	4.5-6.0	0	0	0	0
	24-30	4.0-15	0.0-2.5	4.5-6.0	0	0	0	0
	>30	---	---	---	---	---	---	---
Chatfield-----	0-1	85-94	32-37	4.5-6.0	0	0	0	0
	1-3	110-156	33-38	4.5-6.0	0	0	0	0
	3-5	11-13	3.3-5.5	4.5-6.0	0	0	0	0
	5-10	5.0-20	3.0-5.0	4.5-6.0	0	0	0	0
	10-24	4.0-15	3.0-5.0	4.5-6.0	0	0	0	0
	24-30	4.0-15	0.0-2.5	4.5-6.0	0	0	0	0
	>30	---	---	---	---	---	---	---
Rock outcrop-----	---	---	---	---	---	---	---	---
USCHRD: Urban land, Chatfield substratum-----	0-12	---	---	---	---	---	---	---
	12-24	4.0-15	3.0-5.0	4.5-6.0	0	0	0	0
	24-30	4.0-15	0.0-2.5	4.5-6.0	0	0	0	0
	>30	---	---	---	---	---	---	---
Chatfield-----	0-1	85-94	32-37	4.5-6.0	0	0	0	0
	1-3	110-156	33-38	4.5-6.0	0	0	0	0
	3-5	11-13	3.3-5.5	4.5-6.0	0	0	0	0
	5-10	5.0-20	3.0-5.0	4.5-6.0	0	0	0	0
	10-24	4.0-15	3.0-5.0	4.5-6.0	0	0	0	0
	24-30	4.0-15	0.0-2.5	4.5-6.0	0	0	0	0
	>30	---	---	---	---	---	---	---
Rock outcrop-----	---	---	---	---	---	---	---	---
USFARC: Urban land, Farmington substratum-----	0-12	---	---	---	---	---	---	---
	12-15	4.4-15	0.0-4.8	5.1-7.8	0	0	0	0
	>15	---	---	---	---	---	---	---
Farmington-----	0-1	85-94	32-37	4.5-6.0	0	0	0	0
	1-3	11-11	3.1-11	5.1-7.3	0	0	0	0
	3-9	4.4-15	0.0-4.8	5.1-7.8	0	0	0	0
	9-15	4.4-15	0.0-4.8	5.1-7.8	0	0	0	0
	>15	---	---	---	---	---	---	---

Table 29.—Chemical Soil Properties—Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbon- ate	Gypsum	Salinity	Sodium adsorp- tion ratio
	Inches	meq/100 g	meq/100 g	pH	Pct	Pct	mmhos/cm	
USFARC: (cont.) Rock outcrop-----	---	---	---	---	---	---	---	---
USFARD: Urban land, Farmington substratum-----	0-12 12-15 >15	--- 4.4-15 ---	--- 0.0-4.8 ---	--- 5.1-7.8 ---	--- 0 ---	--- 0 ---	--- 0 ---	--- 0 ---
Farmington-----	0-1 1-3 3-9 9-15 >15	85-94 11-11 4.4-15 4.4-15 ---	32-37 3.1-11 0.0-4.8 0.0-4.8 ---	4.5-6.0 5.1-7.3 5.1-7.8 5.1-7.8 ---	0 0 0 0 ---	0 0 0 0 ---	0 0 0 0 ---	0 0 0 0 ---
Rock outcrop-----	---	---	---	---	---	---	---	---
USFAWB: Urban land, Farmington substratum-----	0-12 12-15 >15	--- 4.4-15 ---	--- 0.0-4.8 ---	--- 5.1-7.8 ---	--- 0 ---	--- 0 ---	--- 0 ---	--- 0 ---
Farmington-----	0-1 1-3 3-9 9-15 >15	85-94 11-11 4.4-15 4.4-15 ---	32-37 3.1-11 0.0-4.8 0.0-4.8 ---	4.5-6.0 5.1-7.3 5.1-7.8 5.1-7.8 ---	0 0 0 0 ---	0 0 0 0 ---	0 0 0 0 ---	0 0 0 0 ---
Wassaic-----	0-1 1-5 5-9 9-17 17-28 >28	85-94 9.5-14 4.4-15 4.4-15 4.4-15 ---	32-37 0.0-4.5 0.0-4.8 0.0-9.8 0.0-9.8 ---	4.5-6.0 5.6-7.3 5.6-7.3 5.6-7.3 5.6-7.3 ---	0 0 0 0 0 ---	0 0 0 0 0 ---	0 0 0 0 0 ---	0 0 0 0 0 ---
USHAZA: Urban land, Hazen substratum-----	0-12 12-18 18-29 29-41 41-60	--- 5.4-7.4 0.6-3.6 0.6-3.6 0.6-3.6	--- 2.3-3.9 0.0-3.2 0.0-3.2 0.0-3.2	--- 5.6-6.5 6.1-7.8 6.1-7.8 6.1-7.8	--- 0 0 0 0	--- 0 0 0 0	--- 0 0 0 0	--- 0 0 0 0
Hazen-----	0-1 1-10 10-18 18-29 29-41 41-60	85-94 5.9-9.0 5.4-7.4 0.6-3.6 0.6-3.6 0.6-3.6	32-37 3.1-8.4 2.3-3.9 0.0-3.2 0.0-3.2 0.0-3.2	4.5-6.0 5.6-6.5 5.6-6.5 6.1-7.8 6.1-7.8 6.1-7.8	0 0 0 0 0 0	0 0 0 0 0 0	0 0 0 0 0 0	0 0 0 0 0 0
Hoosic-----	0-1 1-9 9-21 21-27 27-37 37-49 49-60	85-94 5.9-9.0 5.4-7.4 0.6-3.6 0.6-3.6 0.6-3.6 0.6-3.6	32-37 3.1-8.4 2.3-3.9 0.0-3.2 0.0-3.2 0.0-3.2 0.0-3.2	4.5-6.0 4.5-5.5 4.5-5.5 4.5-6.0 4.5-6.0 4.5-6.0 4.5-6.0	0 0 0 0 0 0 0	0 0 0 0 0 0 0	0 0 0 0 0 0 0	0 0 0 0 0 0 0

Table 29.—Chemical Soil Properties—Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbon- ate	Gypsum	Salinity	Sodium adsorp- tion ratio
	Inches	meq/100 g	meq/100 g	pH	Pct	Pct	mmhos/cm	
USHAZB: Urban land, Hazen substratum-----	0-12	---	---	---	---	---	---	---
	12-18	5.4-7.4	2.3-3.9	5.6-6.5	0	0	0	0
	18-29	0.6-3.6	0.0-3.2	6.1-7.8	0	0	0	0
	29-41	0.6-3.6	0.0-3.2	6.1-7.8	0	0	0	0
	41-60	0.6-3.6	0.0-3.2	6.1-7.8	0	0	0	0
Hazen-----	0-1	85-94	32-37	4.5-6.0	0	0	0	0
	1-10	5.9-9.0	3.1-8.4	5.6-6.5	0	0	0	0
	10-18	5.4-7.4	2.3-3.9	5.6-6.5	0	0	0	0
	18-29	0.6-3.6	0.0-3.2	6.1-7.8	0	0	0	0
	29-41	0.6-3.6	0.0-3.2	6.1-7.8	0	0	0	0
	41-60	0.6-3.6	0.0-3.2	6.1-7.8	0	0	0	0
Hoosic-----	0-1	85-94	32-37	4.5-6.0	0	0	0	0
	1-9	5.9-9.0	3.1-8.4	4.5-5.5	0	0	0	0
	9-21	5.4-7.4	2.3-3.9	4.5-5.5	0	0	0	0
	21-27	0.6-3.6	0.0-3.2	4.5-6.0	0	0	0	0
	27-37	0.6-3.6	0.0-3.2	4.5-6.0	0	0	0	0
	37-49	0.6-3.6	0.0-3.2	4.5-6.0	0	0	0	0
	49-60	0.6-3.6	0.0-3.2	4.5-6.0	0	0	0	0
USNAMB: Urban land, Nassau substratum-----	0-12	---	---	---	---	---	---	---
	12-13	4.6-6.5	2.5-2.7	4.5-6.5	0	0	0	0
	>13	---	---	---	---	---	---	---
Nassau-----	0-7	3.5-8.7	3.1-5.4	4.5-7.3	0	0	0	0
	7-13	4.6-6.5	2.5-2.7	4.5-6.5	0	0	0	0
	>13	---	---	---	---	---	---	---
Manlius-----	0-9	3.5-8.7	3.1-5.4	3.5-7.3	0	0	0	0
	9-20	4.6-6.5	2.5-2.7	3.5-6.5	0	0	0	0
	20-29	4.6-6.5	2.5-2.7	4.5-6.5	0	0	0	0
	>29	---	---	---	---	---	---	---
USNAMC: Urban land, Nassau substratum-----	0-12	---	---	---	---	---	---	---
	12-13	4.6-6.5	2.5-2.7	4.5-6.5	0	0	0	0
	>13	---	---	---	---	---	---	---
Nassau-----	0-7	3.5-8.7	3.1-5.4	4.5-7.3	0	0	0	0
	7-13	4.6-6.5	2.5-2.7	4.5-6.5	0	0	0	0
	>13	---	---	---	---	---	---	---
Manlius-----	0-9	3.5-8.7	3.1-5.4	3.5-7.3	0	0	0	0
	9-20	4.6-6.5	2.5-2.7	3.5-6.5	0	0	0	0
	20-29	4.6-6.5	2.5-2.7	4.5-6.5	0	0	0	0
	>29	---	---	---	---	---	---	---
USNAMD: Urban land, Nassau substratum-----	0-12	---	---	---	---	---	---	---
	12-13	4.6-6.5	2.5-2.7	4.5-6.5	0	0	0	0
	>13	---	---	---	---	---	---	---
Nassau-----	0-7	3.5-8.7	3.1-5.4	4.5-7.3	0	0	0	0
	7-13	4.6-6.5	2.5-2.7	4.5-6.5	0	0	0	0
	>13	---	---	---	---	---	---	---



Table 29.—Chemical Soil Properties—Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbon- ate	Gypsum	Salinity	Sodium adsorp- tion ratio
	Inches	meq/100 g	meq/100 g	pH	Pct	Pct	mmhos/cm	
USNAMD: (cont.)								
Manlius-----	0-9	3.5-8.7	3.1-5.4	3.5-7.3	0	0	0	0
	9-20	4.6-6.5	2.5-2.7	3.5-6.5	0	0	0	0
	20-29	4.6-6.5	2.5-2.7	4.5-6.5	0	0	0	0
	>29	---	---	---	---	---	---	---
USWUSB:								
Urban land, Wurtsboro substratum-----	0-12	---	---	---	---	---	---	---
	12-18	2.3-6.5	0.1-5.7	3.5-5.5	0	0	0	0
	18-24	2.3-6.5	0.1-5.7	3.5-5.5	0	0	0	0
	24-30	1.2-4.3	0.0-2.3	3.5-5.5	0	0	0	0
	30-60	1.2-4.3	0.0-2.3	3.5-5.5	0	0	0	0
Wurtsboro-----	0-2	85-94	32-37	4.5-6.0	0	0	0	0
	2-3	5.9-13	3.1-11	3.5-5.5	0	0	0	0
	3-5	2.3-4.4	1.1-1.8	3.5-5.5	0	0	0	0
	5-6	7.8-15	3.6-5.9	3.5-5.5	0	0	0	0
	6-18	2.3-6.5	0.1-5.7	3.5-5.5	0	0	0	0
	18-24	2.3-6.5	0.1-5.7	3.5-5.5	0	0	0	0
	24-30	1.2-4.3	0.0-2.3	3.5-5.5	0	0	0	0
	30-60	1.2-4.3	0.0-2.3	3.5-5.5	0	0	0	0
Swartswood-----	0-1	85-94	32-37	4.5-6.0	0	0	0	0
	1-2	5.9-13	3.1-11	3.5-5.5	0	0	0	0
	2-3	2.3-5.0	1.1-1.8	3.5-5.5	0	0	0	0
	3-4	7.8-15	3.6-5.9	3.5-5.5	0	0	0	0
	4-21	2.3-6.5	0.1-5.7	3.5-5.5	0	0	0	0
	21-32	1.2-4.3	0.0-2.3	3.5-5.5	0	0	0	0
	32-60	1.2-4.3	0.0-2.3	3.5-5.5	0	0	0	0
VepBc:								
Venango, extremely stony-----	0-1	85-94	32-37	4.5-6.0	0	0	0	0
	1-6	11-15	4.4-11	3.5-6.0	0	0	0	0
	6-16	4.6-9.0	0.4-12	3.5-6.0	0	0	0	0
	16-22	3.5-9.0	0.0-12	4.5-6.5	0	0	0	0
	22-34	3.5-9.0	0.0-12	4.5-6.5	0	0	0	0
	34-60	3.5-9.0	0.0-12	5.1-7.3	0	0	0	0
VepCc:								
Venango, extremely stony-----	0-1	85-94	32-37	4.5-6.0	0	0	0	0
	1-6	11-15	4.4-11	3.5-6.0	0	0	0	0
	6-16	4.6-9.0	0.4-12	3.5-6.0	0	0	0	0
	16-22	3.5-9.0	0.0-12	4.5-6.5	0	0	0	0
	22-34	3.5-9.0	0.0-12	4.5-6.5	0	0	0	0
	34-60	3.5-9.0	0.0-12	5.1-7.3	0	0	0	0
WaahAt:								
Wallkill, frequently flooded-----	0-6	7.7-15	6.0-11	4.5-8.4	0	0	0	0
	6-14	6.7-9.4	0.0-4.6	4.5-8.4	0	0	0	0
	14-22	6.7-9.4	0.0-4.6	4.5-8.4	0	0	0	0
	22-27	7.7-15	6.0-11	4.5-8.4	0	0	0	0
	27-55	110-156	33-38	4.5-8.4	0	0	0	0
	55-60	110-156	33-38	4.5-8.4	0	0	0	0

Table 29.—Chemical Soil Properties—Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbon- ate	Gypsum	Salinity	Sodium adsorp- tion ratio
	Inches	meq/100 g	meq/100 g	pH	Pct	Pct	mmhos/cm	
<b>WabBb:</b>								
Wallpack, aeolian mantle, very stony--	0-1	85-94	32-37	4.5-6.0	0	0	0	0
	1-2	3.4-13	0.3-9.3	3.5-5.5	0	0	0	0
	2-8	3.4-13	0.3-9.3	3.5-5.5	0	0	0	0
	8-14	2.2-7.0	0.3-4.1	3.5-5.5	0	0	0	0
	14-21	2.2-7.0	0.3-4.1	3.5-5.5	0	0	0	0
	21-26	2.2-7.0	0.3-4.1	3.5-5.5	0	0	0	0
	26-31	2.2-7.0	0.3-4.1	3.5-5.5	0	0	0	0
	31-36	2.2-7.0	0.3-4.1	3.5-5.5	0	0	0	0
	36-60	2.2-7.0	0.3-4.1	3.5-5.5	0	0	0	0
<b>WabCb:</b>								
Wallpack, aeolian mantle, very stony--	0-1	85-94	32-37	4.5-6.0	0	0	0	0
	1-2	3.4-13	0.3-9.3	3.5-5.5	0	0	0	0
	2-8	3.4-13	0.3-9.3	3.5-5.5	0	0	0	0
	8-14	2.2-7.0	0.3-4.1	3.5-5.5	0	0	0	0
	14-21	2.2-7.0	0.3-4.1	3.5-5.5	0	0	0	0
	21-26	2.2-7.0	0.3-4.1	3.5-5.5	0	0	0	0
	26-31	2.2-7.0	0.3-4.1	3.5-5.5	0	0	0	0
	31-36	2.2-7.0	0.3-4.1	3.5-5.5	0	0	0	0
	36-60	2.2-7.0	0.3-4.1	3.5-5.5	0	0	0	0
<b>WabDb:</b>								
Wallpack, aeolian mantle, very stony--	0-1	85-94	32-37	4.5-6.0	0	0	0	0
	1-2	3.4-13	0.3-9.3	3.5-5.5	0	0	0	0
	2-8	3.4-13	0.3-9.3	3.5-5.5	0	0	0	0
	8-14	2.2-7.0	0.3-4.1	3.5-5.5	0	0	0	0
	14-21	2.2-7.0	0.3-4.1	3.5-5.5	0	0	0	0
	21-26	2.2-7.0	0.3-4.1	3.5-5.5	0	0	0	0
	26-31	2.2-7.0	0.3-4.1	3.5-5.5	0	0	0	0
	31-36	2.2-7.0	0.3-4.1	3.5-5.5	0	0	0	0
	36-60	2.2-7.0	0.3-4.1	3.5-5.5	0	0	0	0
<b>WacB:</b>								
Wallpack-----	0-3	3.5-11	3.1-5.4	5.1-6.5	0	0	0	0
	3-9	3.5-11	3.1-5.4	5.1-6.5	0	0	0	0
	9-16	1.7-15	1.3-4.8	5.1-6.5	0	0	0	0
	16-25	1.2-8.8	0.6-5.3	5.6-7.3	0	0	0	0
	25-65	1.2-8.8	0.6-5.3	5.6-7.8	0	0	0	0
<b>WacBc:</b>								
Wallpack, extremely stony-----	0-1	85-94	32-37	4.5-6.0	0	0	0	0
	1-2	8.0-35	6.0-20	5.1-6.5	0	0	0	0
	2-5	6.0-9.4	0.0-3.9	5.1-6.5	0	0	0	0
	5-18	1.7-15	1.3-4.8	5.1-6.5	0	0	0	0
	18-24	1.2-8.8	0.6-5.3	5.6-7.3	0	0	0	0
	24-42	1.2-8.8	0.6-5.3	5.6-7.3	0	0	0	0
	42-60	1.2-8.8	0.6-5.3	5.6-7.8	0	0	0	0
<b>WacC:</b>								
Wallpack-----	0-3	3.5-11	3.1-5.4	5.1-6.5	0	0	0	0
	3-9	3.5-11	3.1-5.4	5.1-6.5	0	0	0	0
	9-16	1.7-15	1.3-4.8	5.1-6.5	0	0	0	0
	16-25	1.2-8.8	0.6-5.3	5.6-7.3	0	0	0	0
	25-65	1.2-8.8	0.6-5.3	5.6-7.8	0	0	0	0

Table 29.—Chemical Soil Properties—Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbon- ate	Gypsum	Salinity	Sodium adsorp- tion ratio
	Inches	meq/100 g	meq/100 g	pH	Pct	Pct	mmhos/cm	
WacCc: Wallpack, extremely stony-----	0-1	85-94	32-37	4.5-6.0	0	0	0	0
	1-2	8.0-35	6.0-20	5.1-6.5	0	0	0	0
	2-5	6.0-9.4	0.0-3.9	5.1-6.5	0	0	0	0
	5-18	1.7-15	1.3-4.8	5.1-6.5	0	0	0	0
	18-24	1.2-8.8	0.6-5.3	5.6-7.3	0	0	0	0
	24-42	1.2-8.8	0.6-5.3	5.6-7.3	0	0	0	0
	42-60	1.2-8.8	0.6-5.3	5.6-7.8	0	0	0	0
WacD: Wallpack-----	0-3	3.5-11	3.1-5.4	5.1-6.5	0	0	0	0
	3-9	3.5-11	3.1-5.4	5.1-6.5	0	0	0	0
	9-16	1.7-15	1.3-4.8	5.1-6.5	0	0	0	0
	16-25	1.2-8.8	0.6-5.3	5.6-7.3	0	0	0	0
	25-65	1.2-8.8	0.6-5.3	5.6-7.8	0	0	0	0
WacDc: Wallpack, extremely stony-----	0-1	85-94	32-37	4.5-6.0	0	0	0	0
	1-2	8.0-35	6.0-20	5.1-6.5	0	0	0	0
	2-5	6.0-9.4	0.0-3.9	5.1-6.5	0	0	0	0
	5-18	1.7-15	1.3-4.8	5.1-6.5	0	0	0	0
	18-24	1.2-8.8	0.6-5.3	5.6-7.3	0	0	0	0
	24-42	1.2-8.8	0.6-5.3	5.6-7.3	0	0	0	0
	42-60	1.2-8.8	0.6-5.3	5.6-7.8	0	0	0	0
WATER: Water-----	---	---	---	---	---	---	---	---
WecBc: Wellsboro, extremely stony-----	0-8	4.5-8.0	3.1-5.4	3.5-5.5	0	0	0	0
	8-15	4.6-6.5	0.1-5.7	3.5-5.5	0	0	0	0
	15-24	4.6-6.5	0.1-5.7	3.5-5.5	0	0	0	0
	24-29	4.6-6.5	0.1-5.7	3.5-5.5	0	0	0	0
	29-37	4.0-10	0.0-2.3	3.5-5.5	0	0	0	0
	37-60	4.0-10	0.0-2.3	3.5-5.5	0	0	0	0
WecCc: Wellsboro, extremely stony-----	0-8	4.5-8.0	3.1-5.4	3.5-5.5	0	0	0	0
	8-15	4.6-6.5	0.1-5.7	3.5-5.5	0	0	0	0
	15-24	4.6-6.5	0.1-5.7	3.5-5.5	0	0	0	0
	24-29	4.6-6.5	0.1-5.7	3.5-5.5	0	0	0	0
	29-37	4.0-10	0.0-2.3	3.5-5.5	0	0	0	0
	37-60	4.0-10	0.0-2.3	3.5-5.5	0	0	0	0
WumBc: Wurtsboro, extremely stony-----	0-2	85-94	32-37	4.5-6.0	0	0	0	0
	2-3	5.9-13	3.1-11	3.5-5.5	0	0	0	0
	3-5	2.3-4.4	1.1-1.8	3.5-5.5	0	0	0	0
	5-6	7.8-15	3.6-5.9	3.5-5.5	0	0	0	0
	6-18	2.3-6.5	0.1-5.7	3.5-5.5	0	0	0	0
	18-24	2.3-6.5	0.1-5.7	3.5-5.5	0	0	0	0
	24-30	1.2-4.3	0.0-2.3	3.5-5.5	0	0	0	0
	30-60	1.2-4.3	0.0-2.3	3.5-5.5	0	0	0	0

Table 29.—Chemical Soil Properties—Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbon- ate	Gypsum	Salinity	Sodium adsorp- tion ratio
	Inches	meq/100 g	meq/100 g	pH	Pct	Pct	mmhos/cm	
WusBc: Wurtsboro, extremely stony-----	0-2	85-94	32-37	4.5-6.0	0	0	0	0
	2-3	5.9-13	3.1-11	3.5-5.5	0	0	0	0
	3-4	2.3-4.4	1.1-1.8	3.5-5.5	0	0	0	0
	4-6	7.8-15	3.6-5.9	3.5-5.5	0	0	0	0
	6-18	2.3-6.5	0.1-5.7	3.5-5.5	0	0	0	0
	18-24	2.3-6.5	0.1-5.7	3.5-5.5	0	0	0	0
	24-33	1.2-4.3	0.0-2.3	3.5-5.5	0	0	0	0
	33-60	1.2-4.3	0.0-2.3	3.5-5.5	0	0	0	0
Swartswood, extremely stony-----	0-1	85-94	32-37	4.5-6.0	0	0	0	0
	1-2	5.9-13	3.1-11	3.5-5.5	0	0	0	0
	2-3	2.3-5.0	1.1-1.8	3.5-5.5	0	0	0	0
	3-4	7.8-15	3.6-5.9	3.5-5.5	0	0	0	0
	4-21	2.3-6.5	0.1-5.7	3.5-5.5	0	0	0	0
	21-32	1.2-4.3	0.0-2.3	3.5-5.5	0	0	0	0
	32-60	1.2-4.3	0.0-2.3	3.5-5.5	0	0	0	0
WusCc: Wurtsboro, extremely stony-----	0-2	85-94	32-37	4.5-6.0	0	0	0	0
	2-3	5.9-13	3.1-11	3.5-5.5	0	0	0	0
	3-4	2.3-4.4	1.1-1.8	3.5-5.5	0	0	0	0
	4-6	7.8-15	3.6-5.9	3.5-5.5	0	0	0	0
	6-18	2.3-6.5	0.1-5.7	3.5-5.5	0	0	0	0
	18-24	2.3-6.5	0.1-5.7	3.5-5.5	0	0	0	0
	24-33	1.2-4.3	0.0-2.3	3.5-5.5	0	0	0	0
	33-60	1.2-4.3	0.0-2.3	3.5-5.5	0	0	0	0
Swartswood, extremely stony-----	0-1	85-94	32-37	4.5-6.0	0	0	0	0
	1-2	5.9-13	3.1-11	3.5-5.5	0	0	0	0
	2-3	2.3-5.0	1.1-1.8	3.5-5.5	0	0	0	0
	3-4	7.8-15	3.6-5.9	3.5-5.5	0	0	0	0
	4-21	2.3-6.5	0.1-5.7	3.5-5.5	0	0	0	0
	21-32	1.2-4.3	0.0-2.3	3.5-5.5	0	0	0	0
	32-60	1.2-4.3	0.0-2.3	3.5-5.5	0	0	0	0
WusDc: Wurtsboro, extremely stony-----	0-2	85-94	32-37	4.5-6.0	0	0	0	0
	2-3	5.9-13	3.1-11	3.5-5.5	0	0	0	0
	3-4	2.3-4.4	1.1-1.8	3.5-5.5	0	0	0	0
	4-6	7.8-15	3.6-5.9	3.5-5.5	0	0	0	0
	6-18	2.3-6.5	0.1-5.7	3.5-5.5	0	0	0	0
	18-24	2.3-6.5	0.1-5.7	3.5-5.5	0	0	0	0
	24-33	1.2-4.3	0.0-2.3	3.5-5.5	0	0	0	0
	33-60	1.2-4.3	0.0-2.3	3.5-5.5	0	0	0	0
Swartswood, extremely stony-----	0-1	85-94	32-37	4.5-6.0	0	0	0	0
	1-2	5.9-13	3.1-11	3.5-5.5	0	0	0	0
	2-3	2.3-5.0	1.1-1.8	3.5-5.5	0	0	0	0
	3-4	7.8-15	3.6-5.9	3.5-5.5	0	0	0	0
	4-21	2.3-6.5	0.1-5.7	3.5-5.5	0	0	0	0
	21-32	1.2-4.3	0.0-2.3	3.5-5.5	0	0	0	0
	32-60	1.2-4.3	0.0-2.3	3.5-5.5	0	0	0	0

Table 30.—Soil Features

(See text for definitions of terms used in this table. Absence of an entry indicates that the feature is not a concern; data were not estimated.)

Map symbol and soil name	Restrictive layer					Subsidence		Potential for frost action	Risk
	Kind	Depth to top	Thickness	Hardness	Initial	Total			
		In					In		
AhbBc: Alden, extremely stony-	---	---	---	---	0	0	High	High	
AhcBc: Alden, gneiss till substratum, extremely stony-----	---	---	---	---	0	0	High	High	
AruCh: Arnot, very rocky-----	Lithic bedrock	10-20	0	Indurated	0	0	Moderate	Low	
Lordstown, very rocky--	Lithic bedrock	20-40	0	Indurated	0	0	Moderate	Low	
ArvD: Arnot-----	Lithic bedrock	10-20	0	Indurated	0	0	Moderate	Low	
Lordstown-----	Lithic bedrock	20-40	0	Indurated	0	0	Moderate	Low	
Rock outcrop-----	Lithic bedrock	0	---	Indurated	0	0	None	---	
ArvE: Arnot-----	Lithic bedrock	10-20	0	Indurated	0	0	Moderate	Low	
Lordstown-----	Lithic bedrock	20-40	0	Indurated	0	0	Moderate	Low	
Rock outcrop-----	Lithic bedrock	0	---	Indurated	0	0	None	---	
AtcA: Atherton, very poorly drained-----	---	---	---	---	0	0	High	High	
Atherton, poorly drained-----	---	---	---	---	0	0	High	High	
CatbA: Catden-----	---	---	---	---	4-18	4-18	High	High	
ChkC: Chatfield-----	Lithic bedrock	20-40	0	Indurated	0	0	Moderate	Low	
Hollis-----	Lithic bedrock	10-20	0	Indurated	0	0	Moderate	Low	
Rock outcrop-----	Lithic bedrock	0	---	Indurated	0	0	None	---	

Table 30.—Soil Features—Continued

Map symbol and soil name	Restrictive layer					Subsidence		Potential for frost action	Risk of unconsolidated soil
	Kind	Depth to top In	Thickness In	Hardness	Initial In	Total In			
ChKE: Chatfield-----	Lithic bedrock	20-40	0	Indurated	0	0	Moderate	Low	
Hollis-----	Lithic bedrock	10-20	0	Indurated	0	0	Moderate	Low	
ChKE: Rock outcrop-----	Lithic bedrock	0	---	Indurated	0	0	None	---	
ChWBc: Chippewa, extremely stony-----	Fragipan	8-20	8-36	Noncemented	0	0	High	High	
CorA: Colonie-----	---	---	---	---	0	0	Low	Low	
CorB: Colonie-----	---	---	---	---	0	0	Low	Low	
DefAr: Delaware, rarely flooded-----	---	---	---	---	0	0	Moderate	Low	
DefBr: Delaware, rarely flooded-----	---	---	---	---	0	0	Moderate	Low	
FaxC: Farmington-----	Lithic bedrock	10-20	0	Strongly cemented	0	0	Moderate	Low	
Rock outcrop-----	Lithic bedrock	0	---	Indurated	0	0	None	---	
FdwB: Farmington-----	Lithic bedrock	10-20	0	Strongly cemented	0	0	Moderate	Low	
Wassaic-----	Lithic bedrock	20-40	0	Strongly cemented	0	0	Moderate	Moderate	
Rock outcrop-----	Lithic bedrock	0	---	Indurated	0	0	None	---	
FmhAs: Fluvaquents, occasionally flooded--	---	---	---	---	0	0	High	High	
FrdAb: Fredon, very stony-----	Strongly contrasting textural stratification	22-40	20-38	Noncemented	0	0	High	Low	

Table 30.—Soil Features—Continued

Map symbol and soil name	Restrictive layer				Subsidence		Potential for frost action	Risk
	Kind	Depth	Thickness	Hardness	Initial	Total		
		In	In	In				
FrdAb: (cont.)								
Halsey, very stony-----	Strongly contrasting textural stratification	20-40	20-40	Noncemented	0	0	High	High
GawEh:								
Galway, very rocky-----	Lithic bedrock	20-40	0	Strongly cemented	0	0	Moderate	Low
HdxAb:								
Hazen, very stony-----	---	---	---	---	0	0	Moderate	Low
Hoosic, very stony-----	---	---	---	---	0	0	Low	Low
HdxBb:								
Hazen, very stony-----	---	---	---	---	0	0	Moderate	Low
Hoosic, very stony-----	---	---	---	---	0	0	Low	Low
HhmBc:								
Hibernia, extremely stony-----	Fragipan	18-36	6-18	Noncemented	0	0	High	Moderate
HkrgBb:								
Hinckley, very stony---	---	---	---	---	0	0	Low	Low
HkrgCb:								
Hinckley, very stony---	---	---	---	---	0	0	Low	Low
HncD:								
Hollis-----	Lithic bedrock	10-20	0	Indurated	0	0	Moderate	Low
Rock outcrop-----	Lithic bedrock	0	---	Indurated	0	0	None	---
Chatfield-----	Lithic bedrock	20-40	0	Indurated	0	0	Moderate	Low
HonCb:								
Hoosic, very stony-----	---	---	---	---	0	0	Low	Low
Hazen, very stony-----	---	---	---	---	0	0	Moderate	Low
HopeB:								
Hoosic, very stony-----	---	---	---	---	0	0	Low	Low
Otisville, very stony---	---	---	---	---	0	0	Low	Low

Table 30.--Soil Features--Continued

Map symbol and soil name	Restrictive layer					Subsidence		Potential for frost action	Rr
	Kind	Depth to top	Thickness	Hardness	Initial In	Total In			
LacBc: Lackawanna, extremely stony-----	Fragipan	14-36	20-45	Noncemented	0	0	Moderate	Low	
LacCc: Lackawanna, extremely stony-----	Fragipan	14-36	20-45	Noncemented	0	0	Moderate	Low	
LacDc: Lackawanna, extremely stony-----	Fragipan	14-36	20-45	Noncemented	0	0	Moderate	Low	
LorB: Lordstown-----	Lithic bedrock	20-40	0	Strongly cemented	0	0	Moderate	Low	
Wallpack-----	Fragipan	12-36	29-53	Noncemented	0	0	Moderate	Low	
LorC: Lordstown-----	Lithic bedrock	20-40	0	Strongly cemented	0	0	Moderate	Low	
Wallpack-----	Fragipan	12-36	29-53	Noncemented	0	0	Moderate	Low	
LorCh: Lordstown, very rocky--	Lithic bedrock	20-40	0	Strongly cemented	0	0	Moderate	Low	
Wallpack, very rocky---	Fragipan	12-36	24-48	Noncemented	0	0	Moderate	Low	
LorD: Lordstown-----	Lithic bedrock	20-40	0	Strongly cemented	0	0	Moderate	Low	
Wallpack-----	Fragipan	12-36	29-53	Noncemented	0	0	Moderate	Low	
LorDh: Lordstown, very rocky--	Lithic bedrock	20-40	0	Strongly cemented	0	0	Moderate	Low	
Wallpack, very rocky---	Fragipan	12-36	24-48	Noncemented	0	0	Moderate	Low	
MabEh: Manlius, very rocky----	Lithic bedrock	20-40	0	Strongly cemented	0	0	Moderate	Low	
Nassau, very rocky-----	Lithic bedrock	10-20	0	Strongly cemented	0	0	Moderate	Low	
NauBh: Nassau, very rocky-----	Lithic bedrock	10-20	0	Strongly cemented	0	0	Moderate	Low	
Manlius, very rocky-----	Lithic bedrock	20-40	0	Strongly cemented	0	0	Moderate	Low	



Table 30.—Soil Features—Continued

Map symbol and soil name	Restrictive layer					Subsidence		Potential for frost action	Risk for unconsolidated soils
	Kind	Depth to top In	Thickness In	Hardness	Initial In	Total In			
NauCh: Nassau, very rocky-----	Lithic bedrock	10-20	0	Strongly cemented	0	0	Moderate	Low	
Manlius, very rocky-----	Lithic bedrock	20-40	0	Strongly cemented	0	0	Moderate	Low	
NauDh: Nassau, very rocky-----	Lithic bedrock	10-20	0	Strongly cemented	0	0	Moderate	Low	
Manlius, very rocky-----	Lithic bedrock	20-40	0	Strongly cemented	0	0	Moderate	Low	
NauE: Nassau-----	Lithic bedrock	10-20	0	Strongly cemented	0	0	Moderate	Low	
Rock outcrop-----	Lithic bedrock	0	---	Indurated	0	0	None	---	
OpnCh: Oquaga, very rocky-----	Lithic bedrock	20-40	0	Indurated	0	0	Moderate	Low	
Lackawanna, very rocky- Fragipan		14-36	20-45	Noncemented	0	0	Moderate	Low	
OpnDh: Oquaga, very rocky-----	Lithic bedrock	20-40	0	Indurated	0	0	Moderate	Low	
Lackawanna, very rocky- Fragipan		14-36	20-45	Noncemented	0	0	Moderate	Low	
OprC: Oquaga-----	Lithic bedrock	20-40	0	Indurated	0	0	Moderate	Low	
Rock outcrop-----	Lithic bedrock	0	---	Indurated	0	0	None	---	
OprE: Oquaga-----	Lithic bedrock	20-40	0	Indurated	0	0	Moderate	Low	
Rock outcrop-----	Lithic bedrock	0	---	Indurated	0	0	None	---	
PHG: Pits, sand and gravel--	---	---	---	---	0	0	---	Low	
PohA: Pompton-----	---	---	---	---	0	0	High	Moderate	
QY: Pits, quarry-----	Lithic bedrock	0	0	Very strongly cemented	0	0	---	---	
RkrB: Riverhead-----	---	---	---	---	0	0	Moderate	Low	

Table 30.—Soil Features—Continued

Map symbol and soil name	Restrictive layer					Subsidence		Potential for frost action	Risk
	Kind	Depth to top	Thickness	Hardness	Initial	Total			
							In		
RnaF: Rock outcrop-----	Lithic bedrock	0	---	Indurated	0	0	None	---	
Arnot-----	Lithic bedrock	10-20	0	Indurated	0	0	Moderate	Low	
Rubble land-----	---	---	---	---	0	0	None	---	
RnFC: Rock outcrop-----	Lithic bedrock	0	---	Indurated	0	0	None	---	
Farmington-----	Lithic bedrock	10-20	0	Strongly cemented	0	0	Moderate	Low	
Galway-----	Lithic bedrock	20-40	0	Strongly cemented	0	0	Moderate	Low	
RnFD: Rock outcrop-----	Lithic bedrock	0	---	Indurated	0	0	None	---	
Farmington-----	Lithic bedrock	10-20	0	Strongly cemented	0	0	Moderate	Low	
Galway-----	Lithic bedrock	20-40	0	Strongly cemented	0	0	Moderate	Low	
RoefBc: Rockaway, thin fragipan, extremely stony-----	Fragipan	18-40	12-24	Noncemented	0	0	Moderate	Low	
RoefCc: Rockaway, thin fragipan, extremely stony-----	Fragipan	18-40	12-24	Noncemented	0	0	Moderate	Low	
RoefDc: Rockaway, thin fragipan, extremely stony-----	Fragipan	18-40	12-24	Noncemented	0	0	Moderate	Low	
RoKB: Rockaway, thin fragipan	Fragipan	18-40	12-24	Noncemented	0	0	Moderate	Low	
Chatfield-----	Lithic bedrock	20-40	0	Indurated	0	0	Moderate	Low	
Rock outcrop-----	Lithic bedrock	0	---	Indurated	0	0	None	---	

Table 30.—Soil Features—Continued

Map symbol and soil name	Restrictive layer					Subsidence		Potential for frost action	Risk for unconsolidated soils
	Kind	Depth to top	Thickness	Hardness	Initial In	Total In			
		In	In						
RokC: Rockaway, thin fragipan	Fragipan	18-40	12-24	Noncemented	0	0	Moderate	Low	
Chatfield-----	Lithic bedrock	20-40	0	Indurated	0	0	Moderate	Low	
Rock outcrop-----	Lithic bedrock	0	---	Indurated	0	0	None	---	
RokD: Rockaway, thin fragipan	Fragipan	18-40	12-24	Noncemented	0	0	Moderate	Low	
Chatfield-----	Lithic bedrock	20-40	0	Indurated	0	0	Moderate	Low	
Rock outcrop-----	Lithic bedrock	0	---	Indurated	0	0	None	---	
RooB: Rockaway, thin fragipan	Fragipan	18-40	12-24	Noncemented	0	0	Moderate	Low	
Urban land, Rockaway thin fragipan substratum-----	---	---	---	---	0	0	None	Low	
RooC: Rockaway, thin fragipan	Fragipan	18-40	12-24	Noncemented	0	0	Moderate	Low	
Urban land, Rockaway thin fragipan substratum-----	---	---	---	---	0	0	None	Low	
RooD: Rockaway, thin fragipan	Fragipan	18-40	12-24	Noncemented	0	0	Moderate	Low	
Urban land, Rockaway thin fragipan substratum-----	---	---	---	---	0	0	None	Low	
ScoA: Scio-----	---	---	---	---	0	0	High	Moderate	
SwfBc: Swartswood, extremely stony-----	Fragipan	20-36	24-40	Noncemented	0	0	Moderate	Low	
SwfCc: Swartswood, extremely stony-----	Fragipan	20-36	24-40	Noncemented	0	0	Moderate	Low	

Table 30.—Soil Features—Continued

Map symbol and soil name	Restrictive layer					Subsidence		Potential for frost action	R Unco ste
	Kind	Depth to top In	Thickness In	Hardness	Initial In	Total In			
SwfDc: Swartswood, extremely stony-----	Fragipan	20-36	24-40	Noncemented	0	0	Moderate	Low	
UccAs: Udifluvents, occasionally flooded--	---	---	---	---	0	0	Moderate	Low	
UdaB: Udorthents-----	---	---	---	---	0	0	Moderate	Moderate	
UdauB: Udorthents-----	---	---	---	---	0	0	Moderate	Moderate	
Urban land-----	---	---	---	---	0	0	None	Low	
UnfA: Unadilla-----	---	---	---	---	0	0	High	Low	
UnfB: Unadilla-----	---	---	---	---	0	0	High	Low	
USCHRB: Urban land, Chatfield substratum-----	Lithic bedrock	20-40	0	Indurated	0	0	None	Low	
Chatfield-----	Lithic bedrock	20-40	0	Indurated	0	0	Moderate	Low	
Rock outcrop-----	Lithic bedrock	0	---	Indurated	0	0	None	--	
USCHRC: Urban land, Chatfield substratum-----	Lithic bedrock	20-40	0	Indurated	0	0	None	Low	
Chatfield-----	Lithic bedrock	20-40	0	Indurated	0	0	Moderate	Low	
Rock outcrop-----	Lithic bedrock	0	---	Indurated	0	0	None	--	
USCHRD: Urban land, Chatfield substratum-----	Lithic bedrock	20-40	0	Indurated	0	0	None	Low	
Chatfield-----	Lithic bedrock	20-40	0	Indurated	0	0	Moderate	Low	
Rock outcrop-----	Lithic bedrock	0	---	Indurated	0	0	None	--	

Table 30.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Subsidence		Potential for frost action	R
	Kind	Depth to top	Thickness	Hardness	Subsidence			
					Initial In	Total In		
USFARC: Urban land, Farmington substratum-----	Lithic bedrock	10-20	0	Strongly cemented	0	0	None	Low
Farmington-----	Lithic bedrock	10-20	0	Strongly cemented	0	0	Moderate	Low
Rock outcrop-----	Lithic bedrock	0	---	Indurated	0	0	None	---
USFARD: Urban land, Farmington substratum-----	Lithic bedrock	10-20	0	Strongly cemented	0	0	None	Low
Farmington-----	Lithic bedrock	10-20	0	Strongly cemented	0	0	Moderate	Low
Rock outcrop-----	Lithic bedrock	0	---	Indurated	0	0	None	---
USFAWB: Urban land, Farmington substratum-----	Lithic bedrock	10-20	0	Strongly cemented	0	0	None	Low
Farmington-----	Lithic bedrock	10-20	0	Strongly cemented	0	0	Moderate	Low
Wassaic-----	Lithic bedrock	20-40	0	Strongly cemented	0	0	Moderate	Moderate
USHAZA: Urban land, Hazen substratum-----	---	---	---	---	0	0	None	Low
Hazen-----	---	---	---	---	0	0	Moderate	Low
Hoosic-----	---	---	---	---	0	0	Low	Low
USHAZB: Urban land, Hazen substratum-----	---	---	---	---	0	0	None	Low
Hazen-----	---	---	---	---	0	0	Moderate	Low
Hoosic-----	---	---	---	---	0	0	Low	Low
USNAMB: Urban land, Nassau substratum-----	Lithic bedrock	10-20	0	Strongly cemented	0	0	None	Low
Nassau-----	Lithic bedrock	10-20	0	Strongly cemented	0	0	Moderate	Low
Manlius-----	Lithic bedrock	20-40	0	Strongly cemented	0	0	Moderate	Low

Table 30.--Soil Features--Continued

Map symbol and soil name	Restrictive layer					Subsidence		Potential for frost action	Risk of uncon- solidated soil
	Kind	Depth to top	Thickness	Hardness	Initial In	Total In			
USNAMC: Urban land, Nassau substratum-----	Lithic bedrock	10-20	0	Strongly cemented	0	0	None	Low	
Nassau-----	Lithic bedrock	10-20	0	Strongly cemented	0	0	Moderate	Low	
Manlius-----	Lithic bedrock	20-40	0	Strongly cemented	0	0	Moderate	Low	
USNAMD: Urban land, Nassau substratum-----	Lithic bedrock	10-20	0	Strongly cemented	0	0	None	Low	
Nassau-----	Lithic bedrock	10-20	0	Strongly cemented	0	0	Moderate	Low	
Manlius-----	Lithic bedrock	20-40	0	Strongly cemented	0	0	Moderate	Low	
USWUSB: Urban land, Wurtsboro substratum-----	Fragipan	17-28	32-43	Noncemented	0	0	None	Low	
Wurtsboro-----	Fragipan	17-28	32-43	Noncemented	0	0	Moderate	High	
Swartswood-----	Fragipan	20-36	24-40	Noncemented	0	0	Moderate	Low	
VepBc: Venango, extremely stony-----	Fragipan	14-28	32-46	Noncemented	0	0	High	High	
VepCc: Venango, extremely stony-----	Fragipan	14-28	32-46	Noncemented	0	0	High	High	
WaahAt: Wallkill, frequently flooded-----	---	---	---	---	0	0	High	Moderate	
WabBb: Wallpack, aeolian mantle, very stony----	---	---	---	---	0	0	Moderate	Low	
WabCb: Wallpack, aeolian mantle, very stony----	---	---	---	---	0	0	Moderate	Low	
WabDb: Wallpack, aeolian mantle, very stony----	---	---	---	---	0	0	Moderate	Low	

Table 30.—Soil Features—Continued

Map symbol and soil name	Restrictive layer					Subsidence		Potential for frost action	Risk of unconsolidation
	Kind	Depth to top	Thickness	Hardness	Initial In	Total In			
WacB: Wallpack-----	Fragipan	12-36	29-53	Noncemented	0	0	Moderate	Low	
WacBc: Wallpack, extremely stony-----	Fragipan	12-36	24-48	Noncemented	0	0	Moderate	Low	
WacC: Wallpack-----	Fragipan	12-36	29-53	Noncemented	0	0	Moderate	Low	
WacCc: Wallpack, extremely stony-----	Fragipan	12-36	24-48	Noncemented	0	0	Moderate	Low	
WacD: Wallpack-----	Fragipan	12-36	29-53	Noncemented	0	0	Moderate	Low	
WacDc: Wallpack, extremely stony-----	Fragipan	12-36	24-48	Noncemented	0	0	Moderate	Low	
WATER: Water-----	---	---	---	---	---	---	---	---	
WecBc: Wellsboro, extremely stony-----	Fragipan	12-30	30-48	Noncemented	0	0	High	High	
WecCc: Wellsboro, extremely stony-----	Fragipan	12-30	30-48	Noncemented	0	0	High	High	
WumBc: Wurtsboro, extremely stony-----	Fragipan	17-28	32-43	Noncemented	0	0	Moderate	High	
WusBc: Wurtsboro, extremely stony-----	Fragipan	17-28	32-43	Noncemented	0	0	Moderate	High	
Swartswood, extremely stony-----	Fragipan	20-36	24-40	Noncemented	0	0	Moderate	Low	
WusCc: Wurtsboro, extremely stony-----	Fragipan	17-28	32-43	Noncemented	0	0	Moderate	High	

Table 30.—Soil Features—Continued

Map symbol and soil name	Restrictive layer				Subsidence		Potential for frost action	Risk for unconsolidated soils
	Kind	Depth to top In	Thickness In	Hardness	Initial In	Total In		
WusCc: (cont.) Swartswood, extremely stony-----	Fragipan	20-36	24-40	Noncemented	0	0	Moderate	Low
WusDc: Wurtsboro, extremely stony-----	Fragipan	17-28	32-43	Noncemented	0	0	Moderate	High
Swartswood, extremely stony-----	Fragipan	20-36	24-40	Noncemented	0	0	Moderate	Low



Table 31.--Water Features

(Depths of layers are in feet. See text for definitions of terms used in this table. Estimates of the frequency of flooding apply to the whole year rather than to individual months. Absence of an entry indicates that the frequency of flooding is a concern or that data were not estimated.)

Map symbol and soil name	Hydro- logic group	Surface runoff	Month	Water table		Ponding			Duration	Frequency	Durat	
				Upper limit	Lower limit	Surface water depth						
AhbBc: Alden, extremely stony----	D	Low		Ft	Ft							
			January	0.0	5.0	0.0-1.0	Very long	Frequent				
			February	0.0	5.0	0.0-1.0	Very long	Frequent				
			March	0.0	5.0	0.0-1.0	Very long	Frequent				
			April	0.0	5.0	0.0-1.0	Very long	Frequent				
			May	0.0	5.0	0.0-1.0	Very long	Frequent				
			June	0.0	5.0	0.0-1.0	Very long	Frequent				
AhcBc: Alden, gneiss till substratum, extremely stony-----	D	Low	November	0.0	5.0	0.0-1.0	Very long	Frequent				
			December	0.0	5.0	0.0-1.0	Very long	Frequent				
AruCh: Arnot, very rocky-----	D	High	January	0.0	5.0	0.0-1.0	Very long	Frequent				
			February	0.0	5.0	0.0-1.0	Very long	Frequent				
			March	0.0	5.0	0.0-1.0	Very long	Frequent				
			April	0.0	5.0	0.0-1.0	Very long	Frequent				
			May	0.0	5.0	0.0-1.0	Very long	Frequent				
			June	0.0	5.0	0.0-1.0	Very long	Frequent				
			November	0.0	5.0	0.0-1.0	Very long	Frequent				
			December	0.0	5.0	0.0-1.0	Very long	Frequent				
Lordstown, very rocky----	C	Medium		---	---	---	None					
ArvD: Arnot-----	D	Very high		---	---	---	None					
Lordstown-----	C	High										
Rock outcrop-----	D	Very high		---	---	---	None					

Table 31.—Water Features—Continued

Map symbol and soil name	Hydro- logic group	Surface runoff	Month	Water table			Ponding			Durat
				Upper limit	Lower limit	Surface water depth	Duration	Frequency		
				Ft	Ft	Ft				
ArvE: Arnot-----	D	Very high								
			Jan-Dec	---	---	---	---	None		
Lordstown-----	C	Very high								
			Jan-Dec	---	---	---	---	None		
Rock outcrop-----	D	Very high								
			Jan-Dec	---	---	---	---	None		
AtcA: Atherton, very poorly drained-----	B/D	Medium								
			January	0.0	15.8-5.8	0.0-0.5	Long	Frequent		
			February	0.0	15.8-5.8	0.0-0.5	Long	Frequent		
			March	0.0	15.8-5.8	0.0-0.5	Long	Frequent		
			April	0.0	15.8-5.8	0.0-0.5	Long	Frequent		
			May	0.0	15.8-5.8	0.0-0.5	Long	Frequent		
			June	0.0	15.8-5.8	0.0-0.5	Long	Frequent		
			July	---	---	0.0-0.5	Long	Frequent		
			August	---	---	0.0-0.5	Long	Frequent		
			September	---	---	0.0-0.5	Long	Frequent		
			October	---	---	0.0-0.5	Long	Frequent		
			November	0.0	15.8-5.8	0.0-0.5	Long	Frequent		
			December	0.0	15.8-5.8	0.0-0.5	Long	Frequent		
Atherton, poorly drained--	B/D	Medium								
			January	0.0-0.5	5.0	---	---	None		
			February	0.0-0.5	5.0	---	---	None		
			March	0.0-0.5	5.0	---	---	None		
			April	0.0-0.5	5.0	---	---	None		
			May	0.0-0.5	5.0	---	---	None		
			June	0.0-0.5	5.0	---	---	None		
			November	0.0-0.5	5.0	---	---	None		
			December	0.0-0.5	5.0	---	---	None		
			CathA: Catden-----	B/D	Very low					
January	0.0	5.0				0.0-1.0	Very long	Frequent		
February	0.0	5.0				0.0-1.0	Very long	Frequent		
March	0.0	5.0				0.0-1.0	Very long	Frequent		
April	0.0	5.0				0.0-1.0	Very long	Frequent		
May	0.0	5.0				0.0-1.0	Very long	Frequent		

Table 31.—Water Features—Continued

Map symbol and soil name	Hydro- logic group	Surface runoff	Month	Water table		Ponding			Frequency	Durati
				Upper limit	Lower limit	Surface water depth	Duration			
				Ft	Ft	Ft				
CatbA: (cont.) Catden-----	B/D	Very low								
			June	0.0	5.0	0.0-1.0	Very long	Frequent		
			September	0.0	5.0	0.0-1.0	Very long	Frequent		
			October	0.0	5.0	0.0-1.0	Very long	Frequent		
			November	0.0	5.0	0.0-1.0	Very long	Frequent		
			December	0.0	5.0	0.0-1.0	Very long	Frequent		
ChkC:										
Chatfield-----	C	Low								
			Jan-Dec	---	---	---	---	None		
Hollis-----										
	D	Low								
			Jan-Dec	---	---	---	---	None		
Rock outcrop-----										
	D	Very high								
			Jan-Dec	---	---	---	---	None		
ChkE:										
Chatfield-----	C	Low								
			Jan-Dec	---	---	---	---	None		
Hollis-----										
	D	Low								
			Jan-Dec	---	---	---	---	None		
Rock outcrop-----										
	D	Very high								
			Jan-Dec	---	---	---	---	None		
ChwBc:										
Chippewa, extremely stony-	D	Very high								
			January	0.0	10.7-1.7	0.0-0.5	Long	Frequent		
			February	0.0	10.7-1.7	0.0-0.5	Long	Frequent		
			March	0.0	10.7-1.7	0.0-0.5	Long	Frequent		
			April	0.0	10.7-1.7	0.0-0.5	Long	Frequent		
			May	0.0	10.7-1.7	0.0-0.5	Long	Frequent		
			June	0.0	10.7-1.7	0.0-0.5	Long	Frequent		
			November	0.0	10.7-1.7	0.0-0.5	Long	Frequent		
			December	0.0	10.7-1.7	0.0-0.5	Long	Frequent		
CorA:										
Colonie-----	A	Very low								
			Jan-Dec	---	---	---	---	None		
CorB:										
Colonie-----	A	Low								
			Jan-Dec	---	---	---	---	None		



Table 31.—Water Features—Continued

Map symbol and soil name	Hydro- logic group	Surface runoff	Month	Water table			Ponding			Durat
				Upper limit	Lower limit	Surface water depth	Duration	Frequency		
				Ft	Ft					
FrdAb: (cont.) Halsey, very stony-----	B/D	Low								
			January	0.0	5.0	0.0-0.5	Very long	Frequent		
			February	0.0	5.0	0.0-0.5	Very long	Frequent		
			March	0.0	5.0	0.0-0.5	Very long	Frequent		
			April	0.0	5.0	0.0-0.5	Very long	Frequent		
			May	0.0	5.0	0.0-0.5	Very long	Frequent		
			June	0.0	5.0	0.0-0.5	Very long	Frequent		
			September	0.0	5.0	0.0-0.5	Very long	Frequent		
			October	0.0	5.0	0.0-0.5	Very long	Frequent		
			November	0.0	5.0	0.0-0.5	Very long	Frequent		
			December	0.0	5.0	0.0-0.5	Very long	Frequent		
GawEh: Galway, very rocky-----	C	High								
			Jan-Dec	---	---	---	None			
HdxAb: Hazen, very stony-----	B	Very low								
			Jan-Dec	---	---	---	None			
Hoosic, very stony-----	B	Very low								
			Jan-Dec	---	---	---	None			
HdxBb: Hazen, very stony-----	B	Low								
			Jan-Dec	---	---	---	None			
Hoosic, very stony-----	B	Very low								
			Jan-Dec	---	---	---	None			
HhmBc: Hibernia, extremely stony-	C	Very high								
			January	0.5-1.5	1.5-3.0	---	---	None		
			February	0.5-1.5	1.5-3.0	---	---	None		
			March	0.5-1.5	1.5-3.0	---	---	None		
			April	0.5-1.5	1.5-3.0	---	---	None		
			May	0.5-1.5	1.5-3.0	---	---	None		
			December	0.5-1.5	1.5-3.0	---	---	None		
HkrgBb: Hinckley, very stony-----	A	Very low								
			Jan-Dec	---	---	---	None			

Table 31.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Surface runoff	Month	Water table		Ponding			Durati
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	
				Ft	Ft	Ft			
HkrgCb: Hinckley, very stony-----	A	Very low	Jan-Dec	---	---	---			---
HncD: Hollis-----	D	High	Jan-Dec	---	---	---			---
Rock outcrop-----	D	Very high	Jan-Dec	---	---	---			---
Chatfield-----	C	High	Jan-Dec	---	---	---			---
HonCb: Hoosic, very stony-----	B	Very low	Jan-Dec	---	---	---			---
Hazen, very stony-----	B	Low	Jan-Dec	---	---	---			---
HopEb: Hoosic, very stony-----	B	Low	Jan-Dec	---	---	---			---
Otisville, very stony-----	A	Low	Jan-Dec	---	---	---			---
LacBc: Lackawanna, extremely stony-----	C	High	Jan-Dec	---	---	---			---
LacCc: Lackawanna, extremely stony-----	C	Very high	Jan-Dec	---	---	---			---
LacDc: Lackawanna, extremely stony-----	C	Very high	Jan-Dec	---	---	---			---

Table 31.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Surface runoff	Month	Water table			Ponding			Durat
				Upper limit	Lower limit	Surface water depth	Duration	Frequency		
LorB: Lordstown-----	C	Low	Jan-Dec	---	---	---	---	None	---	
Wallpack-----	C	Very high	Jan-Dec	---	---	---	---	None	---	
LorC: Lordstown-----	C	Medium	Jan-Dec	---	---	---	---	None	---	
Wallpack-----	B	Very high	Jan-Dec	---	---	---	---	None	---	
LorCh: Lordstown, very rocky----	C	Medium	Jan-Dec	---	---	---	---	None	---	
Wallpack, very rocky----	B	Very high	Jan-Dec	---	---	---	---	None	---	
LorD: Lordstown-----	C	High	Jan-Dec	---	---	---	---	None	---	
Wallpack-----	B	Very high	Jan-Dec	---	---	---	---	None	---	
LorDh: Lordstown, very rocky----	C	High	Jan-Dec	---	---	---	---	None	---	
Wallpack, very rocky----	B	Very high	Jan-Dec	---	---	---	---	None	---	
MabEh: Manlius, very rocky-----	C	High	Jan-Dec	---	---	---	---	None	---	
Nassau, very rocky-----	D	High	Jan-Dec	---	---	---	---	None	---	

Table 31.—Water Features—Continued

Map symbol and soil name	Hydro- logic group	Surface runoff	Month	Water table		Ponding			Frequency	Durat
				Upper limit	Lower limit	Surface water depth	Duration			
				Ft	Ft	Ft				
NauBh: Nassau, very rocky-----	D	Low	Jan-Dec	---	---	---	---	---	None	---
Manlius, very rocky-----	C	Low	Jan-Dec	---	---	---	---	---	None	---
NauCh: Nassau, very rocky-----	D	Medium	Jan-Dec	---	---	---	---	---	None	---
Manlius, very rocky-----	C	Medium	Jan-Dec	---	---	---	---	---	None	---
NauDh: Nassau, very rocky-----	D	High	Jan-Dec	---	---	---	---	---	None	---
Manlius, very rocky-----	C	High	Jan-Dec	---	---	---	---	---	None	---
NavE: Nassau-----	D	High	Jan-Dec	---	---	---	---	---	None	---
Rock outcrop-----	D	Very high	Jan-Dec	---	---	---	---	---	None	---
OpnCh: Oquaga, very rocky-----	C	Medium	Jan-Dec	---	---	---	---	---	None	---
Lackawanna, very rocky----	C	Very high	Jan-Dec	---	---	---	---	---	None	---
OpnDh: Oquaga, very rocky-----	C	High	Jan-Dec	---	---	---	---	---	None	---
Lackawanna, very rocky----	C	Very high	Jan-Dec	---	---	---	---	---	None	---
OprC: Oquaga-----	C	Medium	Jan-Dec	---	---	---	---	---	None	---



Table 31.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Surface runoff	Month	Water table		Ponding			Durat
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	
				Ft	Ft	Ft			
OprC: (cont.) Rock outcrop-----	D	Very high							
			Jan-Dec	---	---	---	None		
OprE: Oquaga-----	C	High							
			Jan-Dec	---	---	---	None		
Rock outcrop-----	D	Very high							
			Jan-Dec	---	---	---	None		
PHG: Pits, sand and gravel-----	---	Medium							
			Jan-Dec	---	---	---	None		
PohA: Pompton-----	B/D	Low							
			Jan-Dec	---	---	---	None		
QY: Pits, quarry-----	---	---							
			Jan-Dec	---	---	---	---		
RkrB: Riverhead-----	B	Low							
			January	2.4-3.4	4.0	---	---	None	
			February	2.4-3.4	4.0	---	---	None	
			March	2.4-3.4	4.0	---	---	None	
			April	2.4-3.4	4.0	---	---	None	
			May	2.4-3.4	4.0	---	---	None	
			June	---	---	---	---	None	
			July	---	---	---	---	None	
			August	---	---	---	---	None	
			September	---	---	---	---	None	
			October	2.4-3.4	4.0	---	---	None	
			November	2.4-3.4	4.0	---	---	None	
			December	2.4-3.4	4.0	---	---	None	
RnaF: Rock outcrop-----	D	Very high							
			Jan-Dec	---	---	---	None		
Arnot-----	D	Very high							
			Jan-Dec	---	---	---	None		
Rubble land-----	D	Low							
			Jan-Dec	---	---	---	None		

Table 31.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Surface runoff	Month	Water table			Ponding			Durati
				Upper limit	Lower limit	Surface water depth	Duration	Frequency		
				Ft	Ft	Ft				
RnC: Rock outcrop-----	D	Very high								
			Jan-Dec	---	---	---			None	---
Farmington-----	D	High								
			Jan-Dec	---	---	---			None	---
Galway-----	C	Medium								
			Jan-Dec	---	---	---			None	---
RnFD: Rock outcrop-----	D	Very high								
			Jan-Dec	---	---	---			None	---
Farmington-----	D	Very high								
			Jan-Dec	---	---	---			None	---
Galway-----	C	High								
			Jan-Dec	---	---	---			None	---
RoefBc: Rockaway, thin fragipan, extremely stony-----	C	Very high								
			Jan-Dec	---	---	---			None	---
RoefCc: Rockaway, thin fragipan, extremely stony-----	C	Very high								
			Jan-Dec	---	---	---			None	---
RoefDc: Rockaway, thin fragipan, extremely stony-----	C	Very high								
			Jan-Dec	---	---	---			None	---
RokB: Rockaway, thin fragipan---	C	Very high								
			Jan-Dec	---	---	---			None	---
Chatfield-----	C	Low								
			Jan-Dec	---	---	---			None	---
Rock outcrop-----	D	Very high								
			Jan-Dec	---	---	---			None	---

Table 31.—Water Features—Continued

Map symbol and soil name	Hydro- logic group	Surface runoff	Month	Water table		Ponding			Durat-
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	
				Ft	Ft	Ft			
RokC: Rockaway, thin fragipan----	C	Very high	Jan-Dec	---	---	---	---	None	---
Chatfield-----	C	Medium	Jan-Dec	---	---	---	---	None	---
Rock outcrop-----	D	Very high	Jan-Dec	---	---	---	---	None	---
RokD: Rockaway, thin fragipan----	C	Very high	Jan-Dec	---	---	---	---	None	---
Chatfield-----	C	High	Jan-Dec	---	---	---	---	None	---
Rock outcrop-----	D	Very high	Jan-Dec	---	---	---	---	None	---
Roob: Rockaway, thin fragipan----	C	Very high	Jan-Dec	---	---	---	---	None	---
Urban land, Rockaway thin fragipan substratum-----	D	Very high	Jan-Dec	---	---	---	---	None	---
Rooc: Rockaway, thin fragipan----	C	Very high	Jan-Dec	---	---	---	---	None	---
Urban land, Rockaway thin fragipan substratum-----	D	Very high	Jan-Dec	---	---	---	---	None	---
Rood: Rockaway, thin fragipan----	C	Very high	Jan-Dec	---	---	---	---	None	---
Urban land, Rockaway thin fragipan substratum-----	D	Very high	Jan-Dec	---	---	---	---	None	---

Table 31.—Water Features—Continued

Map symbol and soil name	Hydro- logic group	Surface runoff	Month	Water table			Ponding			Durat
				Upper limit	Lower limit	Surface water depth	Duration	Frequency		
ScoA: Scio-----	C	Low		Ft	Ft					
			March	1.5-2.0	>6.0	---	---	None	---	
			April	1.5-2.0	>6.0	---	---	None	---	
			May	1.5-2.0	>6.0	---	---	None	---	
SwfBc: Swartswood, extremely stony-----	C	Very high								
			Jan-Dec	---	---	---	---	None	---	
SwfCc: Swartswood, extremely stony-----	C	Very high	Jan-Dec	---	---	---	---	None	---	
SwfDc: Swartswood, extremely stony-----	C	Very high	Jan-Dec	---	---	---	---	None	---	
UccAs: Udifluvents, occasionally flooded-----	A	Low								
			January	1.5-5.0	>6.0	---	---	None	Very b	
			February	1.5-5.0	>6.0	---	---	None	Very b	
			March	1.5-5.0	>6.0	---	---	None	Very b	
			April	1.5-5.0	>6.0	---	---	None	Very b	
			May	1.5-5.0	>6.0	---	---	None	Very b	
			June	1.5-5.0	>6.0	---	---	None	Very b	
			November	1.5-5.0	>6.0	---	---	None	Very b	
			December	1.5-5.0	>6.0	---	---	None	Very b	
UdaB: Udorthents-----	D	Very low	Jan-Dec	---	---	---	---	None	---	
UdauB: Udorthents-----	D	Medium	Jan-Dec	---	---	---	---	None	---	
Urban land-----	D	---	Jan-Dec	---	---	---	---	None	---	

Table 31.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Surface runoff	Month	Water table		Ponding			Frequency	Durat-
				Upper limit	Lower limit	Surface water depth	Duration			
				Ft	Ft	Ft				
UnfA: Unadilla-----	B	Low								
			Jan-Dec	---	---	---	---		None	
UnfB: Unadilla-----	B	Medium								
			Jan-Dec	---	---	---	---		None	
USCHRB: Urban land, Chatfield substratum-----	D	Very high								
			Jan-Dec	---	---	---	---		None	
Chatfield-----	C	Low								
			Jan-Dec	---	---	---	---		None	
Rock outcrop-----	D	Very high								
			Jan-Dec	---	---	---	---		None	
USCHRC: Urban land, Chatfield substratum-----	D	Very high								
			Jan-Dec	---	---	---	---		None	
Chatfield-----	C	Medium								
			Jan-Dec	---	---	---	---		None	
Rock outcrop-----	D	Very high								
			Jan-Dec	---	---	---	---		None	
USCHRD: Urban land, Chatfield substratum-----	D	Very high								
			Jan-Dec	---	---	---	---		None	
Chatfield-----	C	High								
			Jan-Dec	---	---	---	---		None	
Rock outcrop-----	D	Very high								
			Jan-Dec	---	---	---	---		None	



Table 31.—Water Features—Continued

Map symbol and soil name	Hydro- logic group	Surface runoff	Month	Water table		Ponding			Durat-
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	
				Ft	Ft	Ft			
USHAZB: Urban land, Hazen substratum-----									
	D	Very high	Jan-Dec	---	---	---	---	None	---
Hazen-----	B	Low	Jan-Dec	---	---	---	---	None	---
Hoosic-----	B	Low	Jan-Dec	---	---	---	---	None	---
USNAMB: Urban land, Nassau substratum-----									
	D	Very high	Jan-Dec	---	---	---	---	None	---
Nassau-----	D	Low	Jan-Dec	---	---	---	---	None	---
Manlius-----	C	Low	Jan-Dec	---	---	---	---	None	---
USNAMC: Urban land, Nassau substratum-----									
	D	Very high	Jan-Dec	---	---	---	---	None	---
Nassau-----	D	Medium	Jan-Dec	---	---	---	---	None	---
Manlius-----	C	Medium	Jan-Dec	---	---	---	---	None	---
USNAMD: Urban land, Nassau substratum-----									
	D	Very high	Jan-Dec	---	---	---	---	None	---
Nassau-----	D	High	Jan-Dec	---	---	---	---	None	---
Manlius-----	C	High	Jan-Dec	---	---	---	---	None	---

Table 31.—Water Features—Continued

Map symbol and soil name	Hydro- logic group	Surface runoff	Month	Water table			Ponding			Durat
				Upper limit	Lower limit	Surface water depth	Duration	Frequency		
USWUSB: Urban land, Wurtsboro substratum-----	D	Very high		Ft	Ft					
			January	1.2-2.2	1.4-2.3	---	---	None	---	---
			February	1.2-2.2	1.4-2.3	---	---	None	---	---
			March	1.2-2.2	1.4-2.3	---	---	None	---	---
			November	1.2-2.2	1.4-2.3	---	---	None	---	---
December	1.2-2.2	1.4-2.3	---	---	None	---	---			
Wurtsboro-----	C	Very high								
			January	1.2-2.2	1.4-2.3	---	---	None	---	---
			February	1.2-2.2	1.4-2.3	---	---	None	---	---
			March	1.2-2.2	1.4-2.3	---	---	None	---	---
			November	1.2-2.2	1.4-2.3	---	---	None	---	---
			December	1.2-2.2	1.4-2.3	---	---	None	---	---
Swartswood-----	C	Very high								
			Jan-Dec	---	---	---	---	None	---	---
VepBc: Venango, extremely stony--	D	Very high								
			January	0.5-1.5	1.2-2.3	---	---	None	---	---
			February	0.5-1.5	1.2-2.3	---	---	None	---	---
			March	0.5-1.5	1.2-2.3	---	---	None	---	---
			April	0.5-1.5	1.2-2.3	---	---	None	---	---
			May	0.5-1.5	1.2-2.3	---	---	None	---	---
			November	0.5-1.5	1.2-2.3	---	---	None	---	---
December	0.5-1.5	1.2-2.3	---	---	None	---	---			
VepCc: Venango, extremely stony--	D	Very high								
			January	0.5-1.5	1.2-2.3	---	---	None	---	---
			February	0.5-1.5	1.2-2.3	---	---	None	---	---
			March	0.5-1.5	1.2-2.3	---	---	None	---	---
			April	0.5-1.5	1.2-2.3	---	---	None	---	---
			May	0.5-1.5	1.2-2.3	---	---	None	---	---
			November	0.5-1.5	1.2-2.3	---	---	None	---	---
December	0.5-1.5	1.2-2.3	---	---	None	---	---			
WaahAt: Walkill, frequently flooded-----	D	Low								
			January	0.0	5.0	0.0-0.5	Long	Frequent	Long	Long
			February	0.0	5.0	0.0-0.5	Long	Frequent	Long	Long
			March	0.0	5.0	0.0-0.5	Long	Frequent	Long	Long
			April	0.0	5.0	0.0-0.5	Long	Frequent	Long	Long
			May	0.0	5.0	0.0-0.5	Long	Frequent	Long	Long



Table 31.—Water Features—Continued

Map symbol and soil name	Hydro- logic group	Surface runoff	Month	Water table		Ponding				Durati
				Upper limit	Lower limit	Surface water depth	Duration	Frequency		
				Ft	Ft	Ft				
WaahAt: (cont.) Wallkill, frequently flooded-----										
			June	0.0	5.0	---	---	---	---	---
			September	0.0	5.0	---	---	---	---	---
			October	0.0	5.0	0.0-0.5	Long	Frequent	Long	Long
WabBb: Wallpack, aeolian mantle, very stony-----			November	0.0	5.0	0.0-0.5	Long	Frequent	Long	Long
			December	0.0	5.0	0.0-0.5	Long	Frequent	Long	Long
	B	Low	Jan-Dec	---	---	---	---	None		---
WabCb: Wallpack, aeolian mantle, very stony-----										
			Jan-Dec	---	---	---	---	None		---
	B	Medium								
WabDb: Wallpack, aeolian mantle, very stony-----										
			Jan-Dec	---	---	---	---	None		---
	B									
WacB: Wallpack-----										
			Jan-Dec	---	---	---	---	None		---
	B	Very high								
WacBc: Wallpack, extremely stony-										
			Jan-Dec	---	---	---	---	None		---
	B	Very high								
WacC: Wallpack-----										
			Jan-Dec	---	---	---	---	None		---
	B	Very high								
WacCc: Wallpack, extremely stony-										
			Jan-Dec	---	---	---	---	None		---
	B	Very high								
WacD: Wallpack-----										
			Jan-Dec	---	---	---	---	None		---
	B	Very high								

Table 31.—Water Features—Continued

Map symbol and soil name	Hydro- logic group	Surface runoff	Month	Water table		Ponding			Frequency	Durat
				Upper limit	Lower limit	Surface water depth	Duration			
				Ft	Ft	Ft				
WacDc: Wallpack, extremely stony-	B	Very high	Jan-Dec	---	---	---	---	None		---
WATER: Water-----	---	---	Jan-Dec	---	---	---	---	---		---
WecBc: Wellsboro, extremely stony	C	Very high	January February March November December	1.2-2.7 1.2-2.7 1.2-2.7 1.2-2.7 1.2-2.7	1.4-3.0 1.4-3.0 1.4-3.0 1.4-3.0 1.4-3.0	---	---	None None None None None		---
WecCc: Wellsboro, extremely stony	C	Very high	January February March November December	1.2-2.7 1.2-2.7 1.2-2.7 1.2-2.7 1.2-2.7	1.4-3.0 1.4-3.0 1.4-3.0 1.4-3.0 1.4-3.0	---	---	None None None None None		---
WumBc: Wurtsboro, extremely stony	C	Very high	January February March November December	1.2-2.2 1.2-2.2 1.2-2.2 1.2-2.2 1.2-2.2	1.4-2.3 1.4-2.3 1.4-2.3 1.4-2.3 1.4-2.3	---	---	None None None None None		---
WusBc: Wurtsboro, extremely stony	C	Very high	January February March November December	1.2-2.2 1.2-2.2 1.2-2.2 1.2-2.2 1.2-2.2	1.4-2.3 1.4-2.3 1.4-2.3 1.4-2.3 1.4-2.3	---	---	None None None None None		---
Swartswood, extremely stony-----	C	Very high	Jan-Dec	---	---	---	---	None		---

Table 31.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Surface runoff	Month	Water table		Ponding			Durat
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	
WusCc: Wurtsboro, extremely stony	C	Very high		Ft	Ft				
			January	1.2-2.2	1.4-2.3	---	---	None	
			February	1.2-2.2	1.4-2.3	---	---	None	
			March	1.2-2.2	1.4-2.3	---	---	None	
			November	1.2-2.2	1.4-2.3	---	---	None	
Swartswood, extremely stony-----	C	Very high	December	1.2-2.2	1.4-2.3	---	---	None	
			Jan-Dec	---	---	---	---	None	
WusDc: Wurtsboro, extremely stony	C	Very high							
			January	1.2-2.2	1.4-2.3	---	---	None	
			February	1.2-2.2	1.4-2.3	---	---	None	
			March	1.2-2.2	1.4-2.3	---	---	None	
			November	1.2-2.2	1.4-2.3	---	---	None	
Swartswood, extremely stony-----	C	Very high	December	1.2-2.2	1.4-2.3	---	---	None	
			Jan-Dec	---	---	---	---	None	

Table 32.—Taxonomic Classification of the Soils

(An asterisk in the first column indicates a taxadjunct to the series. See text for a description of those characteristics that are outside the range of the series.)

Soil name	Family or higher taxonomic class
Alden-----	Fine-loamy, mixed, active, nonacid, mesic Mollic Endoaquepts
Arnot-----	Loamy-skeletal, mixed, active, mesic Lithic Dystrudepts
*Atherton-----	Fine-silty, mixed, active, nonacid, mesic Aeric Endoaquepts
Catden-----	Euic, mesic Typic Haplosaprists
Chatfield-----	Coarse-loamy, mixed, superactive, mesic Typic Dystrudepts
Chippewa-----	Fine-loamy, mixed, active, mesic Typic Fragiadepts
Colonie-----	Mixed, mesic Lamellic Udipsamments
Delaware-----	Coarse-loamy, mixed, active, mesic Typic Dystrudepts
Farmington-----	Loamy, mixed, active, mesic Lithic Eutrudepts
Fluvaquents-----	Fluvaquents
Fredon-----	Coarse-loamy over sandy or sandy-skeletal, mixed, active, nonacid, mesic   Aeric Endoaquepts
Galway-----	Coarse-loamy, mixed, superactive, mesic Typic Eutrudepts
Halsey-----	Coarse-loamy over sandy or sandy-skeletal, mixed, active, nonacid, mesic   Typic Humaquepts
Hazen-----	Coarse-loamy, mixed, active, mesic Mollic Hapludalfs
Hibernia-----	Coarse-loamy, mixed, active, mesic Aquic Fragiudults
Hinckley-----	Sandy-skeletal, mixed, mesic Typic Udorthents
Hollis-----	Loamy, mixed, active, mesic Lithic Dystrudepts
*Hoosic-----	Sandy-skeletal, mixed, mesic Humic Dystrudepts
Lackawanna-----	Coarse-loamy, mixed, active, mesic Typic Fragiudepts
Lordstown-----	Coarse-loamy, mixed, active, mesic Typic Dystrudepts
Manlius-----	Loamy-skeletal, mixed, active, mesic Typic Dystrudepts
Nassau-----	Loamy-skeletal, mixed, active, mesic Lithic Dystrudepts
Oquaga-----	Loamy-skeletal, mixed, superactive, mesic Typic Dystrudepts
Otisville-----	Sandy-skeletal, mixed, mesic Typic Udorthents
Pompton-----	Coarse-loamy, mixed, active, mesic Aquic Dystrudepts
Riverhead-----	Coarse-loamy, mixed, active, mesic Typic Dystrudepts
Rockaway-----	Coarse-loamy, mixed, semiactive, mesic Typic Fragiudults
Scio-----	Coarse-silty, mixed, active, mesic Aquic Dystrudepts
Swartswood-----	Coarse-loamy, mixed, active, mesic Typic Fragiudepts
Udifluvents-----	Udifluvents
Udorthents-----	Udorthents
Unadilla-----	Coarse-silty, mixed, active, mesic Typic Dystrudepts
Venango-----	Fine-loamy, mixed, active, mesic Aeric Fragiqualfs
*Wallkill-----	Fine-loamy, mixed, superactive, nonacid, mesic Fluvaquentic Endoaquepts
Wallpack-----	Coarse-loamy, mixed, semiactive, mesic Typic Fragiudalfs
*Wallpack-----	Coarse-loamy, mixed, semiactive, mesic Typic Hapludalfs
Wassaic-----	Fine-loamy, mixed, active, mesic Glossic Hapludalfs
Wellsboro-----	Coarse-loamy, mixed, active, mesic Typic Fragiudepts
Wurtsboro-----	Coarse-loamy, mixed, active, mesic Typic Fragiudepts

Table 33.--Relationship Between Soil Series, Their Parent Material, and Drainage Class

Soil characteristics and parent material	Excessively and somewhat excessively drained	Well drained	Moderately well drained	Somewhat poorly drained	Poorly drained
TILL DEPOSITS					
Very deep, moderately coarse-texture derived mainly from conglomerate and/or red and gray sandstone with a fragipan.		Swartswood	Wurtsboro		
Moderately deep, medium-texture derived mainly from conglomerate.		Lordstown			
Shallow, medium-texture derived mainly from conglomerate.		Arnot			
Very deep, moderately coarse-texture derived mainly from granitic gneiss and/or limestone, sandstone, and shale and/or quartzite with a fragipan.		Rockaway	Rockaway	Hibernia	
Moderately deep, medium-texture derived mainly from granitic gneiss.		Chatfield			
Shallow, medium-texture derived mainly from granitic gneiss.		Hollis			
Very deep, medium-texture derived mainly from red sandstone and siltstone and/or red shale with a fragipan.		Lackawanna	Wellsboro		
Moderately deep, medium-texture derived mainly from red sandstone and siltstone and/or red shale with a fragipan.	Oquaga				
Very deep, medium-texture derived mainly from limestone, sandstone and shale with a fragipan.		Wallpack			
Moderately deep, medium-texture derived mainly from limestone and dolomite.		Galway			

Table 33.--Relationship Between Soil Series, Their Parent Material, and Drainage Class--Continued

Soil characteristics and parent material	Excessively and somewhat excessively drained	Well drained	Moderately well drained	Somewhat poorly drained	Poorly drained
TILL DEPOSITS (cont.)					
Shallow, medium-texture derived mainly from limestone and dolomite.  Moderately deep, moderately fine-texture derived mainly from limestone and dolomite.  Moderately deep, medium-texture derived mainly from acid shale.  Shallow, medium-texture derived mainly from acid shale.  Very deep, moderately fine-texture derived mainly from limestone, sandstone, and shale with a fragipan.		Farmington			
		Wassaic			
		Manlius			
		Nassau			
				Venango	Chippewa
GLACIOFLUVIAL DEPOSITS					
Very deep, coarse-texture derived mainly from granitic gneiss.	Hinckley				
Very deep, coarse-texture derived mainly from sandstone and shale and/or conglomerate.	Otisville				
Very deep, moderately coarse-texture derived mainly from granitic gneiss.		Riverhead		Pompton	
Very deep, moderately coarse-texture derived mainly from sandstone and shale and/or conglomerate.	Hoosic				
Very deep, moderately coarse-texture derived mainly from sandstone and shale and/or conglomerate.		Hazen			

Table 33.—Relationship Between Soil Series, Their Parent Material, and Drainage Class—Continued

Soil characteristics and parent material	Excessively and somewhat excessively drained	Well drained	Moderately well drained	Somewhat poorly drained	Poorly drained
GLACIOFLUVIAL DEPOSITS (cont.)					
Very deep, medium-texture derived mainly from sandstone and/or limestone and dolomite and/or granitic gneiss.				Fredon	
ALLUVIAL DEPOSITS					
Very deep, coarse-texture derived from post-glacial alluvium.	Colonie				
Very deep, moderately coarse-texture derived from post-glacial alluvium.		Delaware			
Very deep, medium-texture derived from post-glacial alluvium.		Unadilla	Scio		
Very deep, medium-texture derived from alluvium overlying organic soil material.					
Very deep, medium-texture to fine-texture derived from recent alluvium.			Udifuvents	Fluvaquents	
AEOLIAN OR COLLUVIAL DEPOSITS OVERLYING TILL DEPOSITS					
Very deep, medium-texture formed in colluvium over till derived mainly from red and gray sandstone and conglomerate, or granitic gneiss.					
Very deep, medium-texture formed in aeolian deposits over till deposits derived mainly from limestone, sandstone, and shale.		Wallpack			

Table 33.—Relationship Between Soil Series, Their Parent Material, and Drainage Class—Continued

Soil characteristics and parent material	Drainage Class					
	Excessively and somewhat excessively drained	Well drained	Moderately well drained	Somewhat poorly drained	Poorly drained	
ORGANIC DEPOSITS						
Very deep soils formed in well decomposed woody and herbaceous organic material, more than 51 inches thick.						
GLACIAL TILL AND OUTWASH DEPOSITS DISTURBED						
Very deep, medium-texture to fine-texture fill material.		Udorthents				

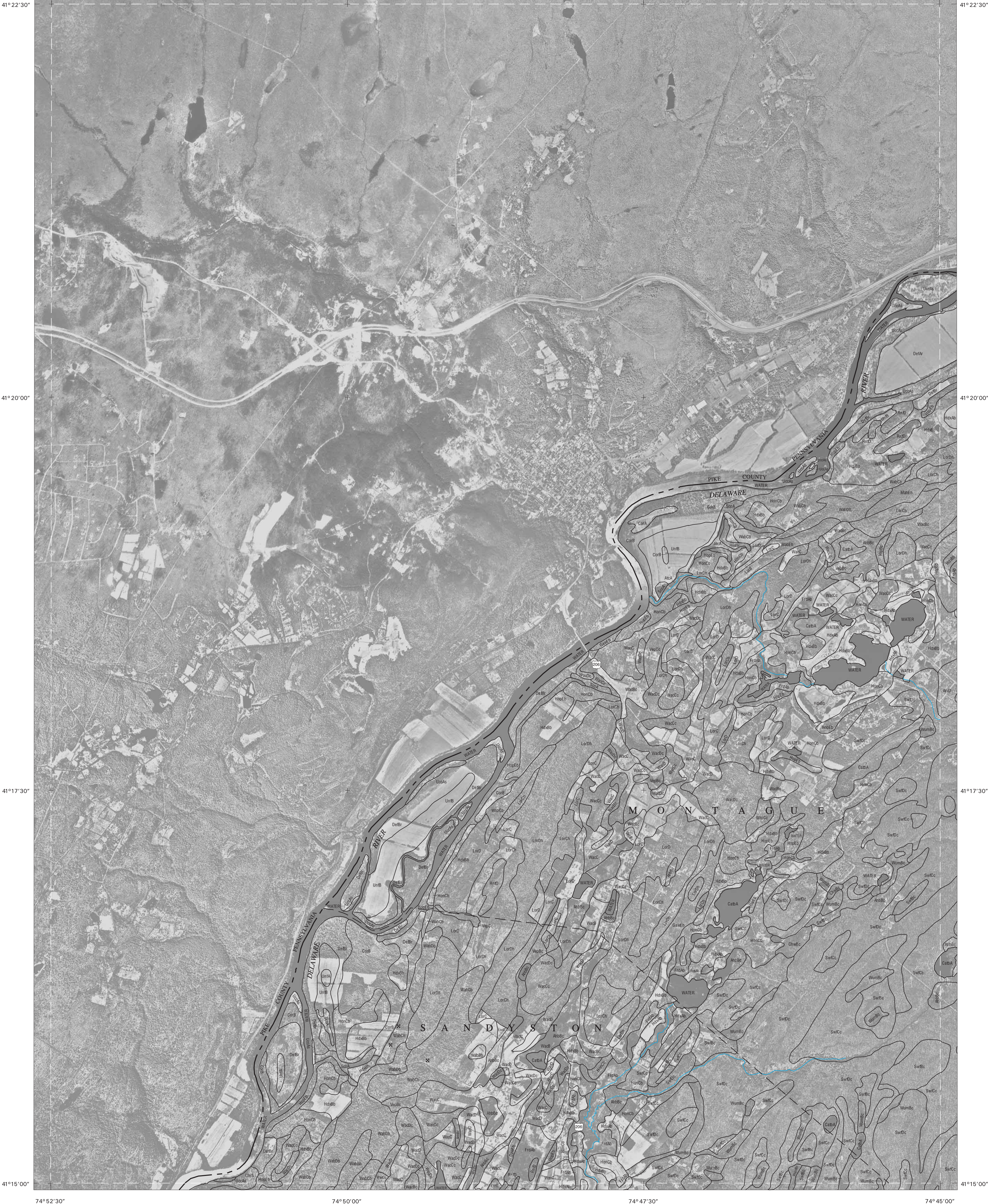


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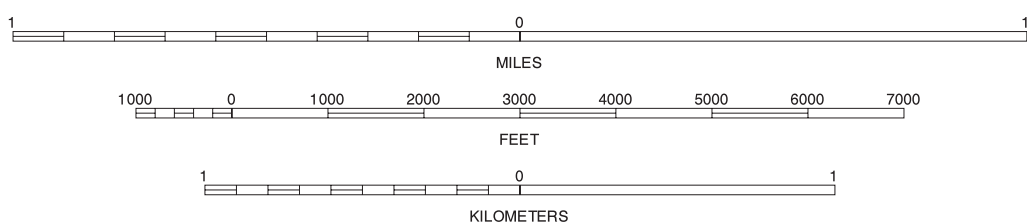
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This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Soil lines were compiled on orthophotographs prepared by the U.S. Department of the Interior, Geological Survey, from 1991 (1:24,000) aerial photography. Soil names and descriptions were approved in 2002. The photo background for this map is an orthophotograph prepared by the U.S. Department of the Interior, Geological Survey, from 1995-1997 aerial photography. Hydrographic lines were developed by NRCS - New Jersey as a navigational aid, and should not be used for any other purpose.

North American Datum of 1983 (NAD83), GRS-80 Spheroid  
1000-meter ticks; Universal Transverse Mercator, zone 18.  
Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



2	PORT JERVIS SOUTH
5	LAKE MASKENOZIA
6	CULVERS GAP
7	BRANCHVILLE

INDEX TO ADJOINING 7.5 MAPS

MILFORD, NEW JERSEY  
7.5 MINUTE SERIES  
SHEET NUMBER 1 OF 18

Soil map delineations extending beyond the dashed white quadrangle neeline are for reference only and are included on adjacent map sheets.



74° 20' 00"

74° 17' 30"

41° 15' 00"

41° 15' 00"

41° 12' 30"

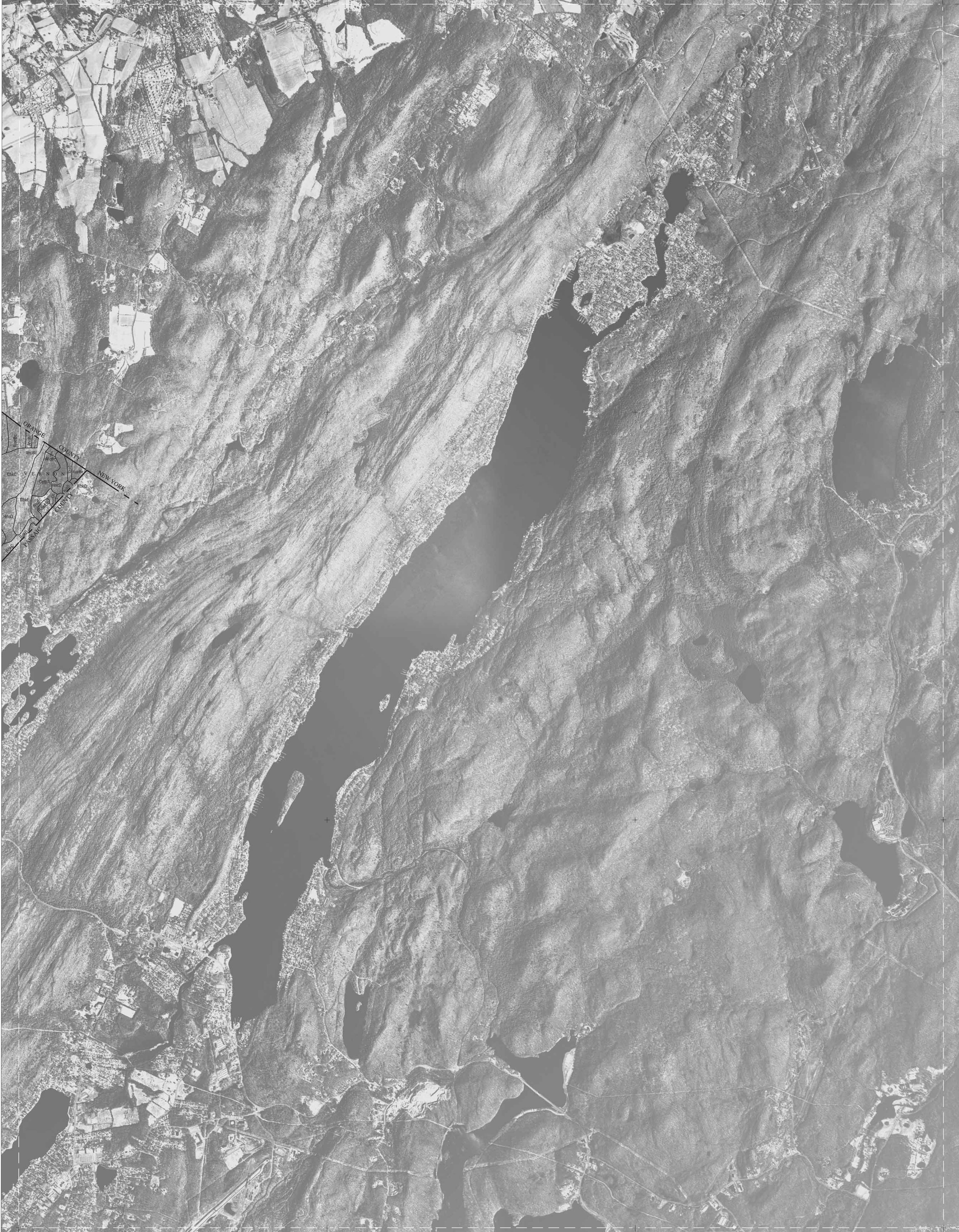
41° 12' 30"

41° 10' 00"

41° 10' 00"

41° 07' 30"

41° 07' 30"



74° 22' 30"

74° 20' 00"

74° 17' 30"

74° 15' 00"

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Soil lines were compiled on orthophotographs prepared by the U.S. Department of the Interior, Geological Survey, from 1991 (1:24,000) aerial photography. Soil names and descriptions were approved in 2002. The photo background for this map is an orthophotograph prepared by the U.S. Department of the Interior, Geological Survey, from 1995-1997 aerial photography. Hydrographic lines were developed by NRCS - New Jersey as a navigational aid, and should not be used for any other purpose.

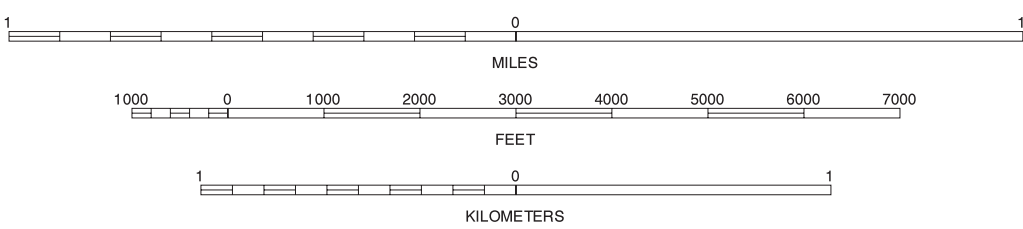
North American Datum of 1983 (NAD83), GRS-80 Spheroid  
1000-meter ticks; Universal Transverse Mercator, zone 18.  
Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH



QUADRANGLE LOCATION

SCALE 1:24000



4		4	PINE ISLAND
9		9	WAWAYANDA
15		15	NEWFOUNDLAND

INDEX TO ADJOINING 7.5 MAPS

GREENWOOD LAKE, NEW JERSEY  
7.5 MINUTE SERIES  
SHEET NUMBER 10 OF 18

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.





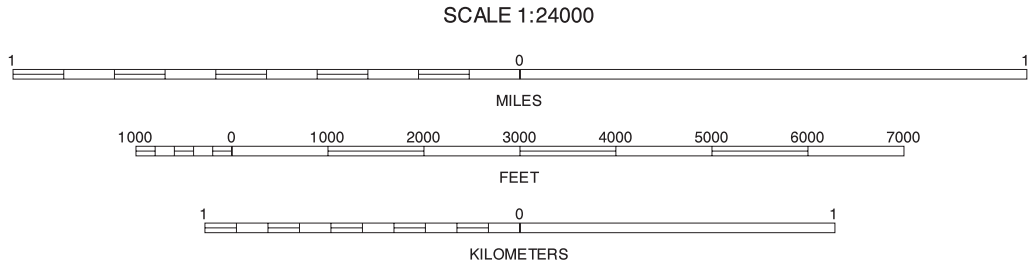
This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Soil lines were compiled on orthophotographs prepared by the U.S. Department of the Interior, Geological Survey, from 1991 (1:24,000) aerial photography. Soil names and descriptions were approved in 2002. The photo background for this map is an orthophotograph prepared by the U.S. Department of the Interior, Geological Survey, from 1995-1997 aerial photography. Hydrographic lines were developed by NRCS - New Jersey as a navigational aid, and should not be used for any other purpose.

North American Datum of 1983 (NAD83), GRS-80 Spheroid  
1000-meter ticks; Universal Transverse Mercator, zone 18.  
Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH



QUADRANGLE LOCATION



5	6
12	16

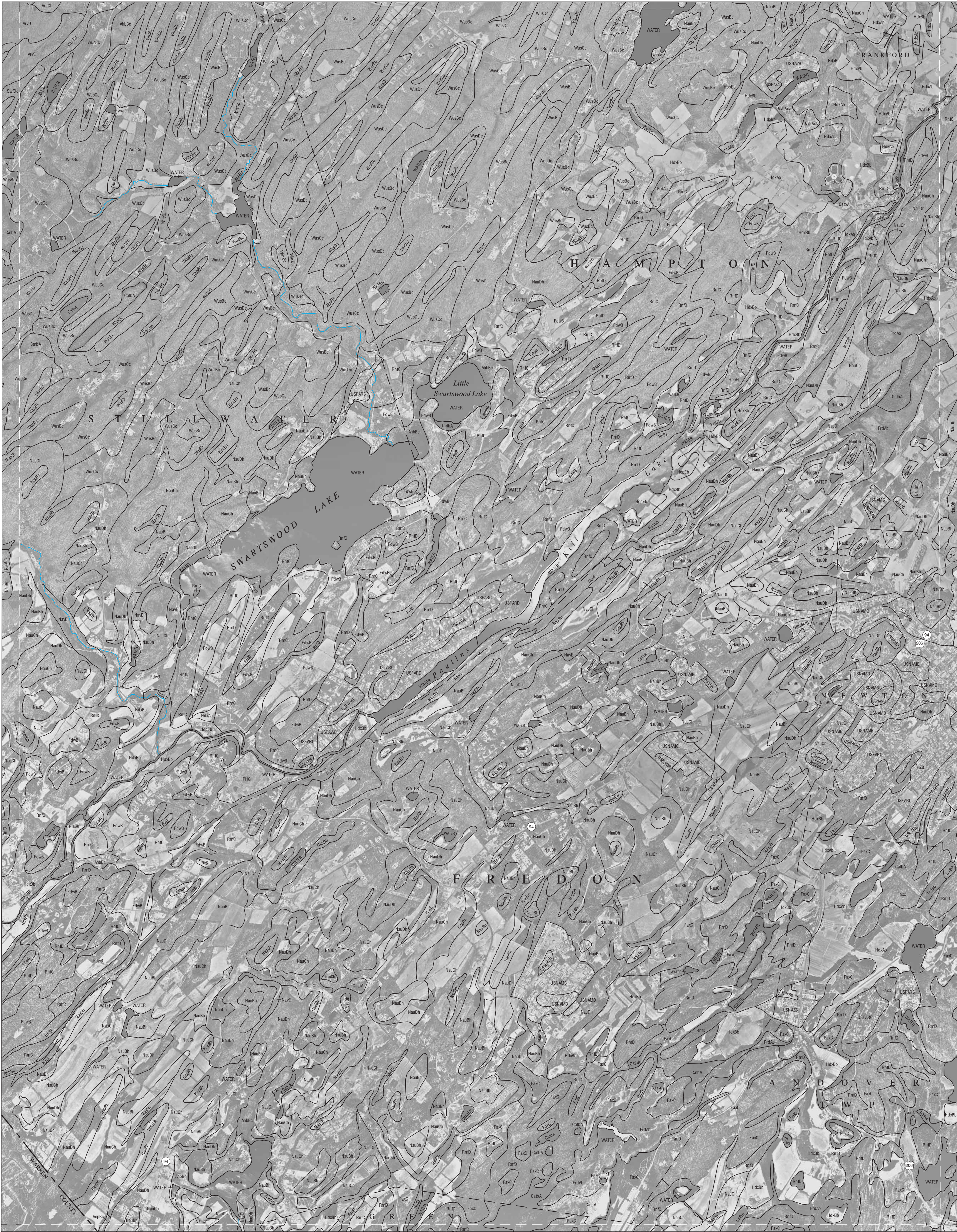
5 LAKE MASKENOZA  
6 CULVERS GAP  
12 NEWTON WEST  
16 TRANQUILITY

INDEX TO ADJOINING 7.5 MAPS

FLATBROOKVILLE, NEW JERSEY  
7.5 MINUTE SERIES  
SHEET NUMBER 11 OF 18

Soil map delineations extending beyond the dashed white quadrangle neartline are for reference only and are included on adjacent map sheets.





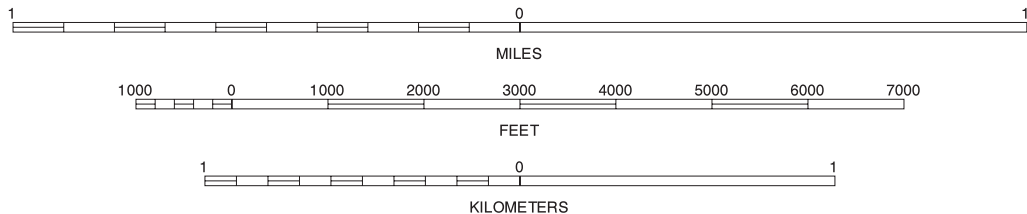
This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Soil lines were compiled on orthophotographs prepared by the U.S. Department of the Interior, Geological Survey, from 1991 (1:24,000) aerial photography. Soil names and descriptions were approved in 2002. The photo background for this map is an orthophotograph prepared by the U.S. Department of the Interior, Geological Survey, from 1995-1997 aerial photography. Hydrographic lines were developed by NRCS - New Jersey as a navigational aid, and should not be used for any other purpose.

North American Datum of 1983 (NAD83), GRS-80 Spheroid 1000-meter ticks; Universal Transverse Mercator, zone 18. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



Joins sheet 16, Tranquility

SCALE 1:24000



5	6	7
11		13
	16	17

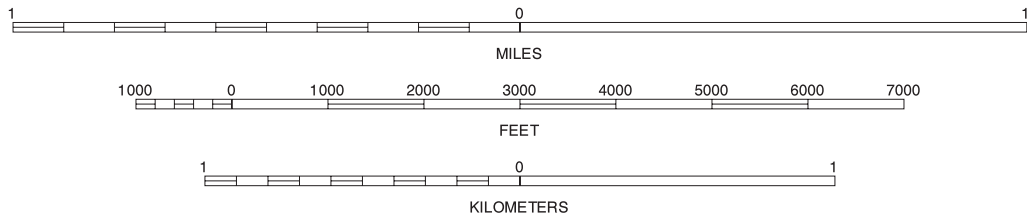
INDEX TO ADJOINING 7.5 MAPS

NEWTON WEST, NEW JERSEY  
7.5 MINUTE SERIES  
SHEET NUMBER 12 OF 18

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

Joins sheet 17,  
Swartwood





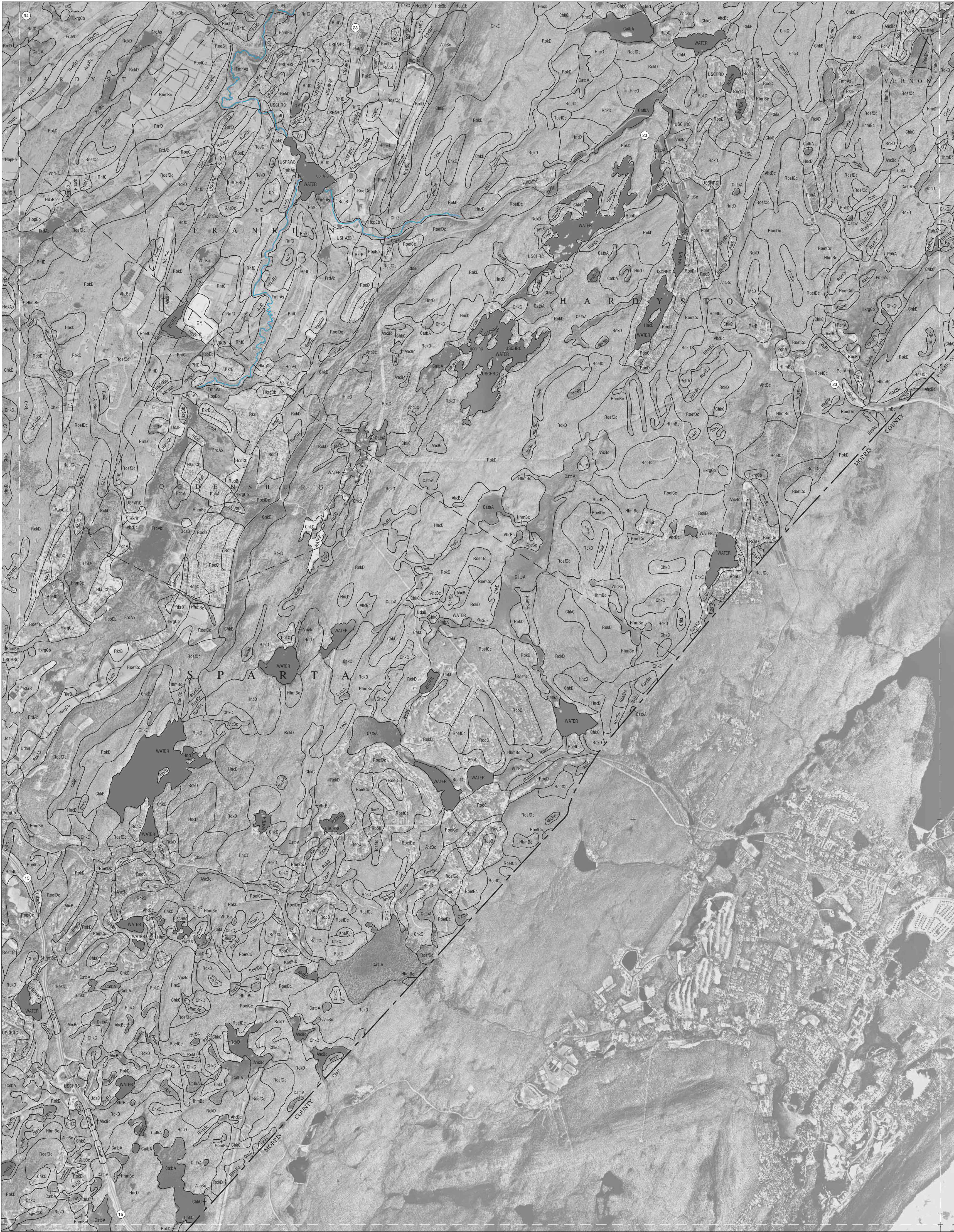
6	7	8
12	13	14
16	17	18

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Soil lines were compiled on orthophotographs prepared by the U.S. Department of the Interior, Geological Survey, from 1991 (1:24,000) aerial photography. Soil names and descriptions were approved in 2002. The photo background for this map is an orthophotograph prepared by the U.S. Department of the Interior, Geological Survey, from 1965-1997 aerial photography. Hydrographic lines were developed by NRCS - New Jersey as a navigational aid, and should not be used for any other purpose.

North American Datum of 1983 (NAD83), GRS-80 Spheroid 1000-meter ticks; Universal Transverse Mercator, zone 18. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

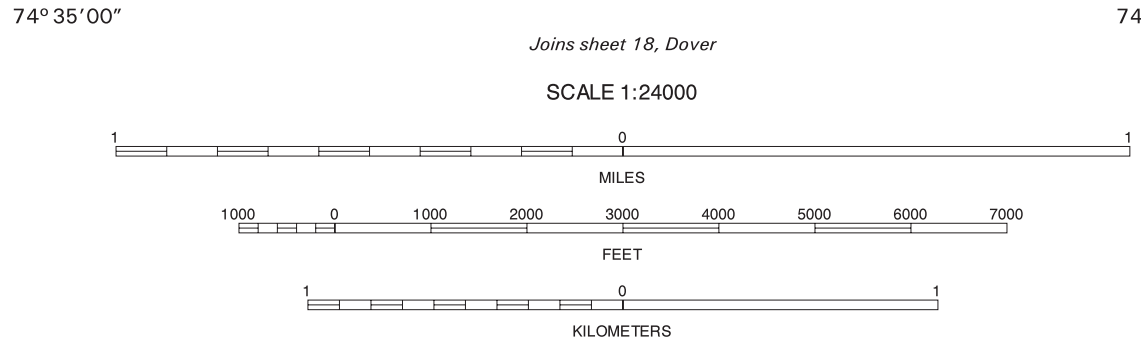
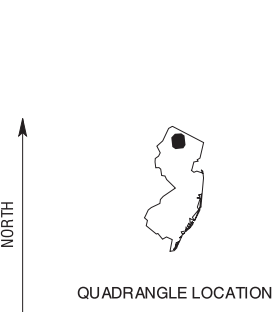






This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Soil lines were compiled on orthophotographs prepared by the U.S. Department of the Interior, Geological Survey, from 1991 (1:24,000) aerial photography. Soil names and descriptions were approved in 2002. The photo background for this map is an orthophotograph prepared by the U.S. Department of the Interior, Geological Survey, from 1995-1997 aerial photography. Hydrographic lines were developed by NRCS - New Jersey as a navigational aid, and should not be used for any other purpose.

North American Datum of 1983 (NAD83), GRS-80 Spheroid  
1000-meter ticks; Universal Transverse Mercator, zone 18.  
Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

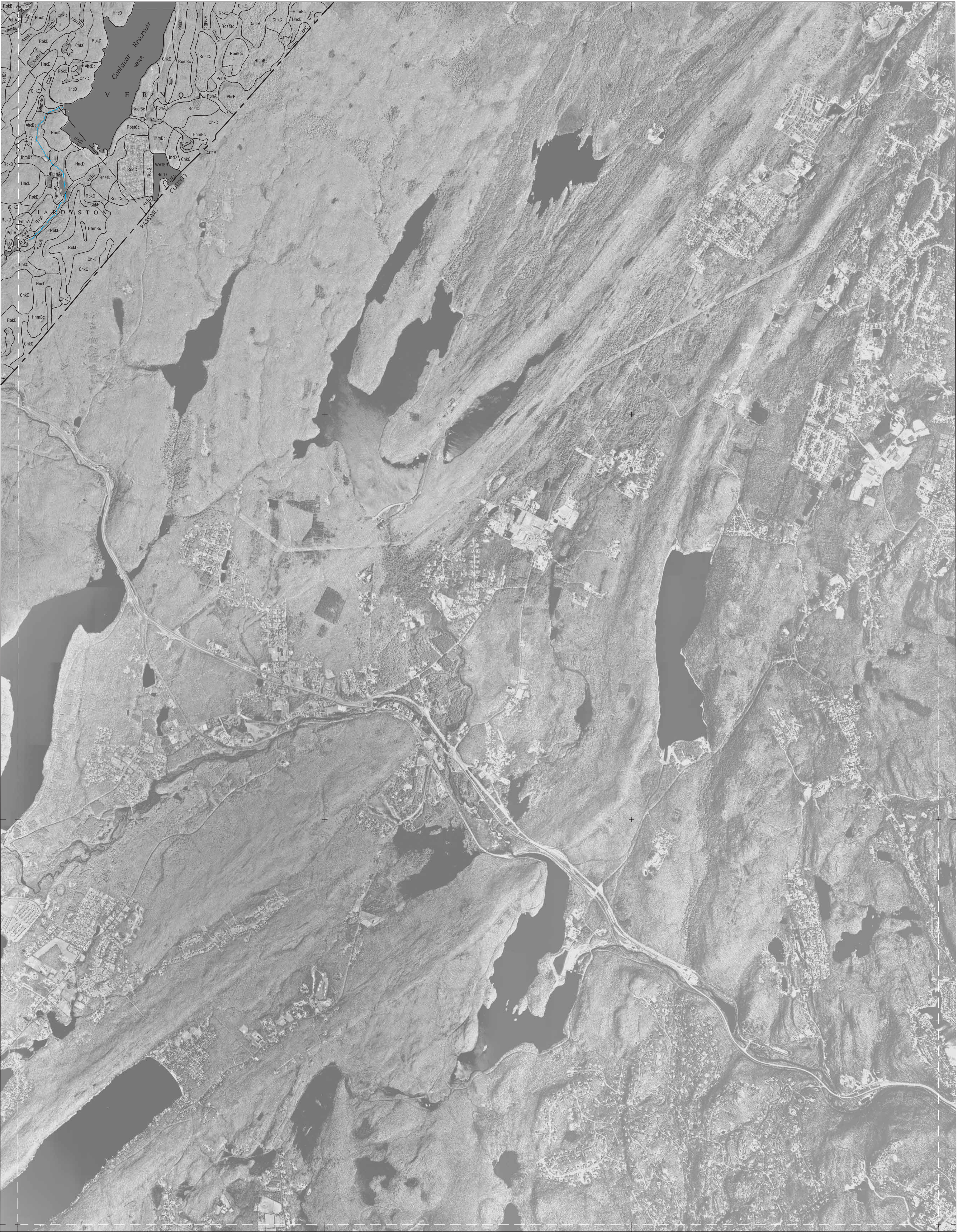


7	8	9
13	14	15
17	18	19

FRANKLIN, NEW JERSEY  
7.5 MINUTE SERIES  
SHEET NUMBER 14 OF 18

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.





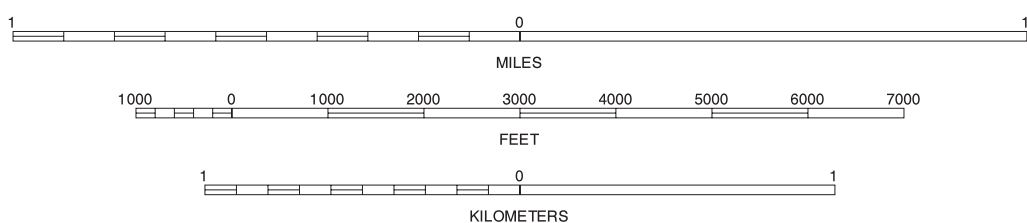
This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Soil lines were compiled on orthophotographs prepared by the U.S. Department of the Interior, Geological Survey, from 1991 (1:24,000) aerial photography. Soil names and descriptions were approved in 2002. The photo background for this map is an orthophotograph prepared by the U.S. Department of the Interior, Geological Survey, from 1995-1997 aerial photography. Hydrographic lines were developed by NRCS - New Jersey as a navigational aid, and should not be used for any other purpose.

North American Datum of 1983 (NAD83), GRS-80 Spheroid  
1000-meter ticks; Universal Transverse Mercator, zone 18.  
Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



QUADRANGLE LOCATION

SCALE 1:24000



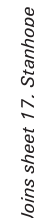
8	9	10
14		
18		

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NEWFOUNDLAND, NEW JERSEY  
7.5 MINUTE SERIES  
SHEET NUMBER 15 OF 18

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.





QUADRANGLE LOCATION

SCALE 1:24000

The graphic scale consists of three horizontal bars. The top bar is labeled 'MILES' and has a scale from 0 to 7,000 with major tick marks every 1,000 units. The middle bar is labeled 'FEET' and has a scale from 0 to 7,000 with major tick marks every 1,000 units. The bottom bar is labeled 'KILOMETERS' and has a scale from 0 to 1 with major tick marks at 0 and 1. Each bar has a corresponding label above it.

11	12	13	11 FLATBROOKVILLE 12 NEWTON WEST 13 NEWTON EAST
		17	17 STANHOPE

INDEX TO ADJOINING 7.5 MAPS

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

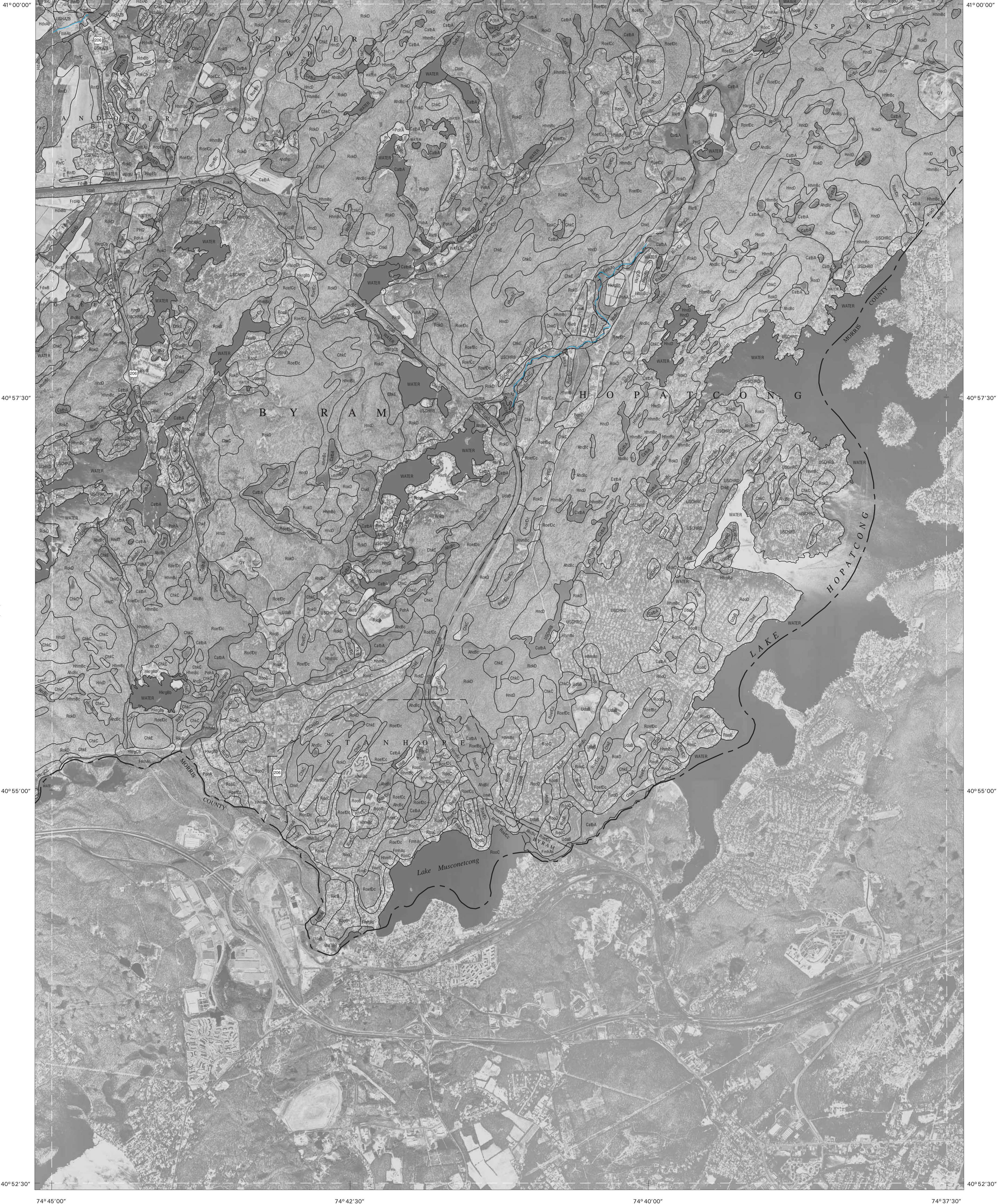


Joins sheet 12,  
Newton West

Joins sheet 14,  
Franklin

UNITED STATES  
DEPARTMENT OF AGRICULTURE  
NATURAL RESOURCES CONSERVATION SERVICE

SUSSEX COUNTY, NEW JERSEY  
STANHOPE QUADRANGLE  
SHEET NUMBER 17 OF 18

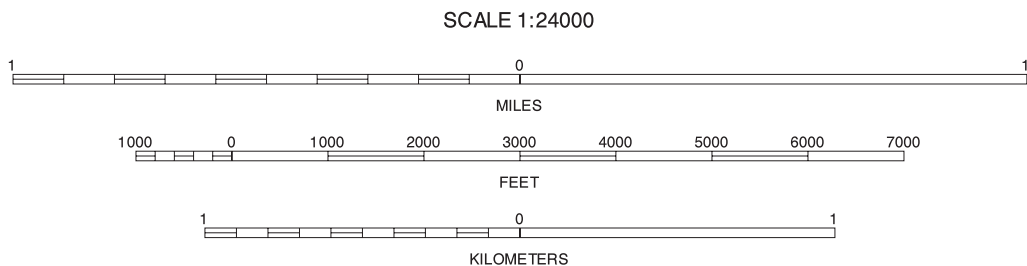


Joins sheet 16, Tranquility

Joins sheet 18, Dover

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Soil lines were compiled on orthophotographs prepared by the U.S. Department of the Interior, Geological Survey, from 1991 (1:24,000) aerial photography. Soil names and descriptions were approved in 2002. The photo background for this map is an orthophotograph prepared by the U.S. Department of the Interior, Geological Survey, from 1995-1997 aerial photography. Hydrographic lines were developed by NRCS - New Jersey as a navigational aid, and should not be used for any other purpose.

North American Datum of 1983 (NAD83), GRS-80 Spheroid 1000-meter ticks; Universal Transverse Mercator, zone 18. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



12	13	14
16	17	18

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STANHOPE, NEW JERSEY  
7.5 MINUTE SERIES  
SHEET NUMBER 17 OF 18

Soil map delineations extending beyond the dashed white quadrangle neckline are for reference only and are included on adjacent map sheets.



Joins sheet 13,  
Newton East

Joins sheet 15,  
Newfoundland

UNITED STATES  
DEPARTMENT OF AGRICULTURE  
NATURAL RESOURCES CONSERVATION SERVICE  
74° 37' 30"

SUSSEX COUNTY, NEW JERSEY  
DOVER QUADRANGLE  
SHEET NUMBER 18 OF 18  
74° 30' 00"

Joins sheet 14, Franklin

74° 32' 30"

74° 35' 00"

41° 00' 00"

41° 00' 00"

40° 57' 30"

40° 57' 30"

40° 55' 00"

40° 55' 00"

40° 52' 30"

40° 52' 30"

74° 37' 30"

74° 35' 00"

74° 32' 30"

74° 30' 00"

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Soil lines were compiled on orthophotographs prepared by the U.S. Department of the Interior, Geological Survey, from 1991 (1:24,000) aerial photography. Soil names and descriptions were approved in 2002. The photo background for this map is an orthophotograph prepared by the U.S. Department of the Interior, Geological Survey, from 1965-1997 aerial photography. Hydrographic lines were developed by NRCS - New Jersey as a navigational aid, and should not be used for any other purpose.

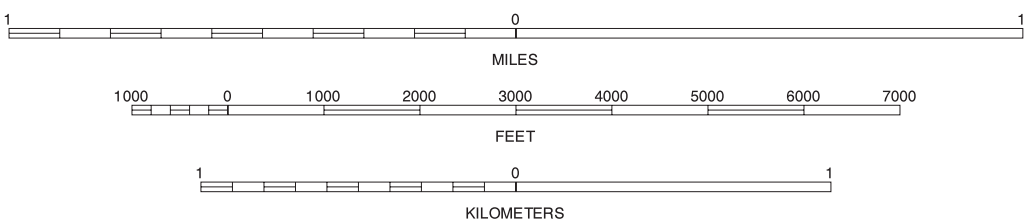
North American Datum of 1983 (NAD83), GRS-80 Spheroid 1000-meter ticks; Universal Transverse Mercator, zone 18. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH



QUADRANGLE LOCATION

SCALE 1:24000



13	14	15
17		

13 NEWTON EAST  
14 FRANKLIN  
15 NEWFOUNDLAND  
17 STANHOPE

INDEX TO ADJOINING 7.5 MAPS

DOVER, NEW JERSEY  
7.5 MINUTE SERIES  
SHEET NUMBER 18 OF 18

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.



41°22'30"

41°22'30"

41°20'00"

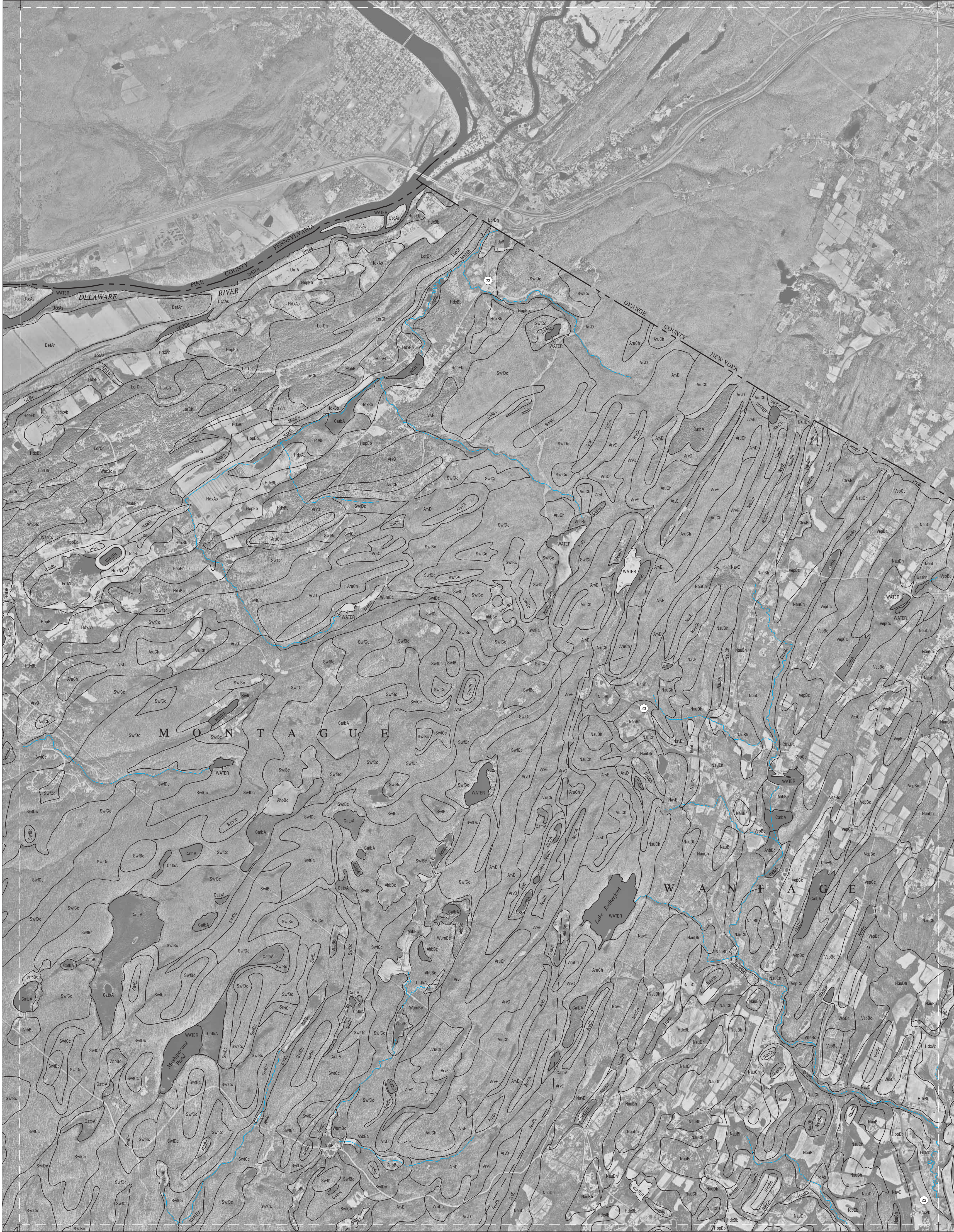
41°20'00"

41°17'30"

41°17'30"

41°15'00"

41°15'00"



74°45'00"

74°42'30"

74°40'00"

74°37'30"

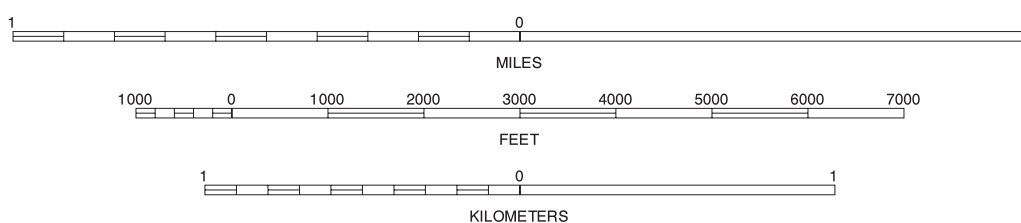
Joins sheet 6,  
Culvers Gap

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Soil lines were compiled on orthophotographs prepared by the U.S. Department of the Interior, Geological Survey, from 1991 (1:24,000) aerial photography. Soil names and descriptions were approved in 2002. The photo background for this map is an orthophotograph prepared by the U.S. Department of the Interior, Geological Survey, from 1995-1997 aerial photography. Hydrographic lines were developed by NRCS - New Jersey as a navigational aid, and should not be used for any other purpose.

North American Datum of 1983 (NAD83), GRS-80 Spheroid  
1000-meter ticks; Universal Transverse Mercator, zone 18.  
Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



QUADRANGLE LOCATION



Joins sheet 7, Branchville

SCALE 1:24000

1	3	
6	7	8

INDEX TO ADJOINING 7.5 MAPS

- 1 MILFORD
- 3 UNIONVILLE
- 6 CULVERS GAP
- 7 BRANCHVILLE
- 8 HAMBURG

PORT JERVIS SOUTH, NEW JERSEY  
7.5 MINUTE SERIES  
SHEET NUMBER 2 OF 18

Soil map delineations extending beyond the dashed white quadrangle neeline are for reference only and are included on adjacent map sheets.

Joins sheet 8,  
Hamburg





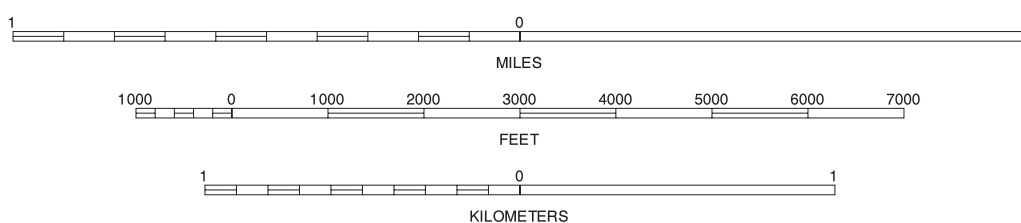
This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Soil lines were compiled on orthophotographs prepared by the U.S. Department of the Interior, Geological Survey, from 1991 (1:24,000) aerial photography. Soil names and descriptions were approved in 2002. The photo background for this map is an orthophotograph prepared by the U.S. Department of the Interior, Geological Survey, from 1995-1997 aerial photography. Hydrographic lines were developed by NRCS - New Jersey as a navigational aid, and should not be used for any other purpose.

North American Datum of 1983 (NAD83), GRS-80 Spheroid  
1000-meter ticks; Universal Transverse Mercator, zone 18.  
Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH



QUADRANGLE LOCATION



Joins sheet 8, Hamburg

SCALE 1:24000

2	4
7	9

INDEX TO ADJOINING 7.5 MAPS

2 PORT JERVIS SOUTH  
4 PINE ISLAND  
7 BRANCHVILLE  
8 HAMBURG  
9 WAWAYANDA

UNIONVILLE, NEW JERSEY  
7.5 MINUTE SERIES  
SHEET NUMBER 3 OF 18

Soil map delineations extending beyond the dashed white quadrangle nealline are for reference only and are included on adjacent map sheets.

Joins sheet 9, Wawayanda



74°27'30"

74°25'00"

74°22'30"

41°22'30"

41°22'30"

41°20'00"

41°20'00"

41°17'30"

41°17'30"

41°15'00"

41°15'00"



Joins sheet 3, Unionville

Joins sheet 8,  
Hawthorn

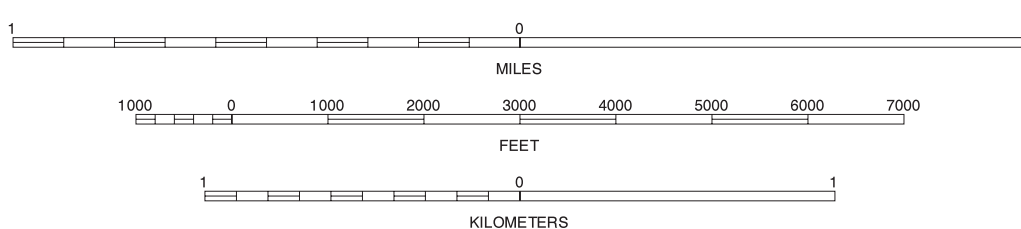
This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Soil lines were compiled on orthophotographs prepared by the U.S. Department of the Interior, Geological Survey, from 1991 (1:24,000) aerial photography. Soil names and descriptions were approved in 2002. The photo background for this map is an orthophotograph prepared by the U.S. Department of the Interior, Geological Survey, from 1995-1997 aerial photography. Hydrographic lines were developed by NRCS - New Jersey as a navigational aid, and should not be used for any other purpose.

North American Datum of 1983 (NAD83), GRS-80 Spheroid  
1000-meter ticks; Universal Transverse Mercator, zone 18.  
Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH



QUADRANGLE LOCATION



Joins sheet 9, Wawayanda

SCALE 1:24000

3	8	10
3	8	10
3	8	10

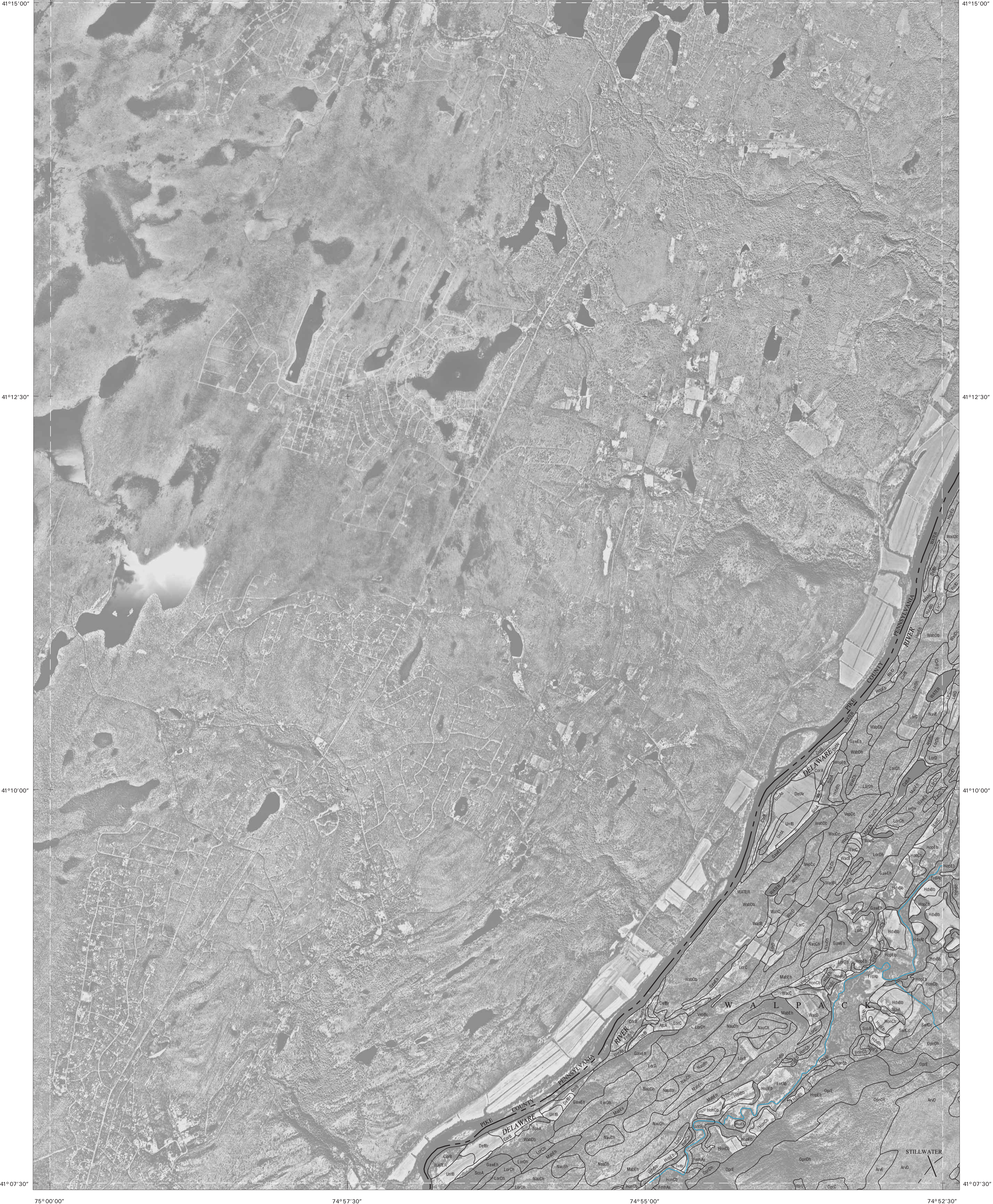
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PINE ISLAND, NEW JERSEY  
7.5 MINUTE SERIES  
SHEET NUMBER 4 OF 18

Soil map delineations extending beyond the dashed white quadrangle neeline are for reference only and are included on adjacent map sheets.

Joins sheet 10,  
Greenwood Lake





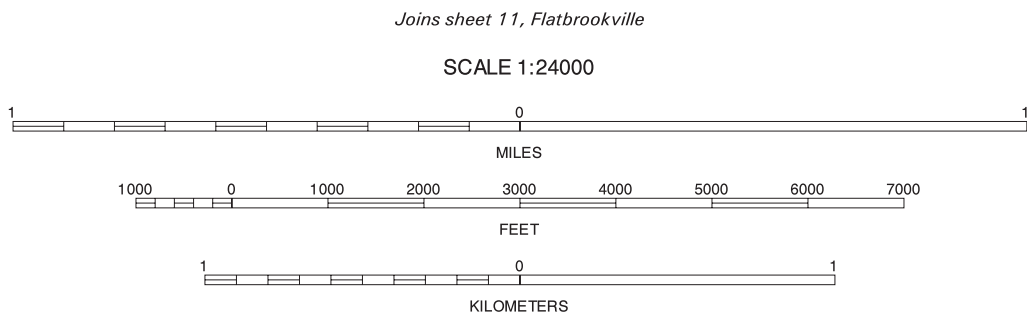
This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Soil lines were compiled on orthophotographs prepared by the U.S. Department of the Interior, Geological Survey, from 1991 (1:24,000) aerial photography. Soil names and descriptions were approved in 2002. The photo background for this map is an orthophotograph prepared by the U.S. Department of the Interior, Geological Survey, from 1995-1997 aerial photography. Hydrographic lines were developed by NRCS - New Jersey as a navigational aid, and should not be used for any other purpose.

North American Datum of 1983 (NAD83), GRS-80 Spheroid  
1000-meter ticks; Universal Transverse Mercator, zone 18.  
Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH



QUADRANGLE LOCATION



Joins sheet 11, Flatbrookville

		1
	6	
11	12	

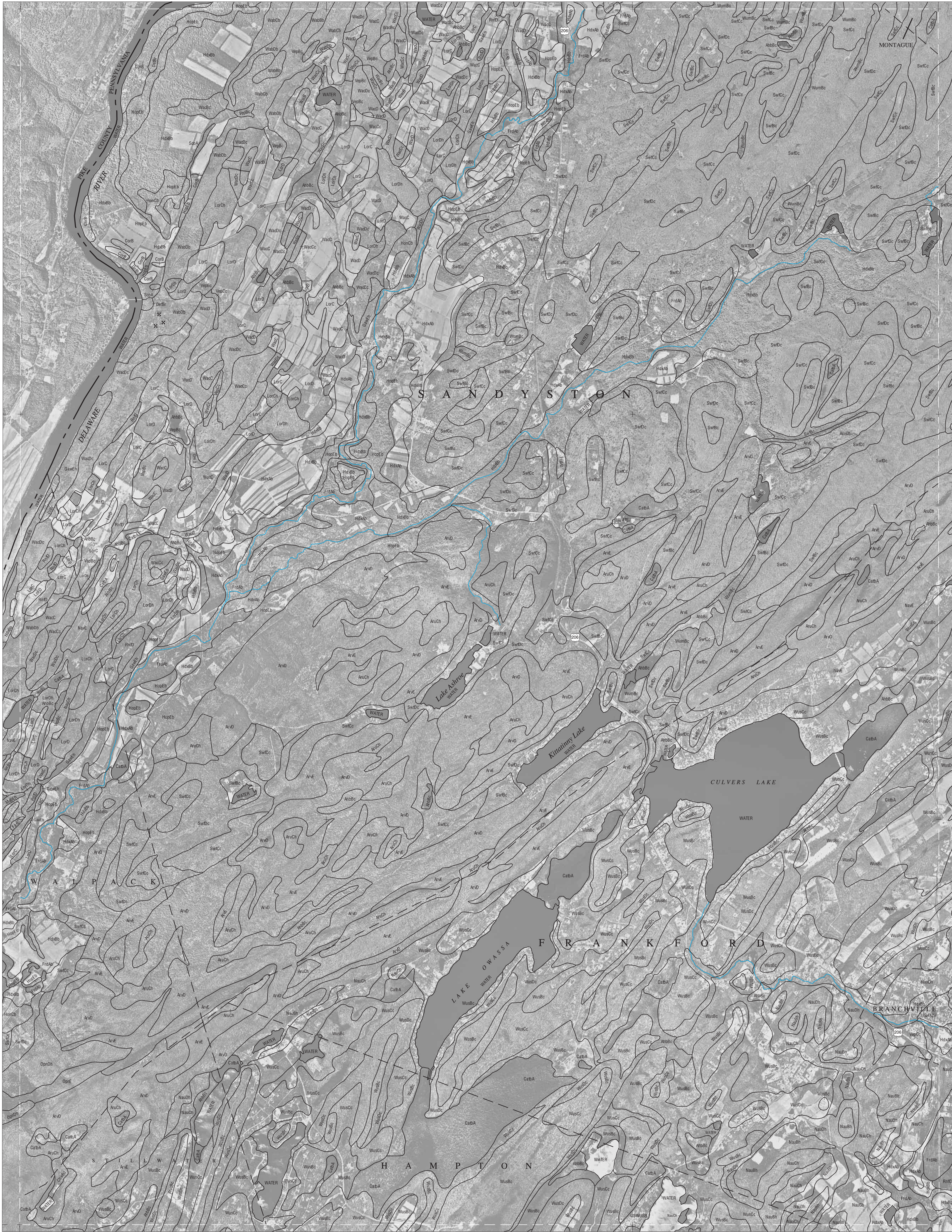
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1 MILFORD  
6 CULVERS GAP  
11 FLATBROOKVILLE  
12 NEWTON WEST

LAKE MASKENOZHA, NEW JERSEY  
7.5 MINUTE SERIES  
SHEET NUMBER 5 OF 18

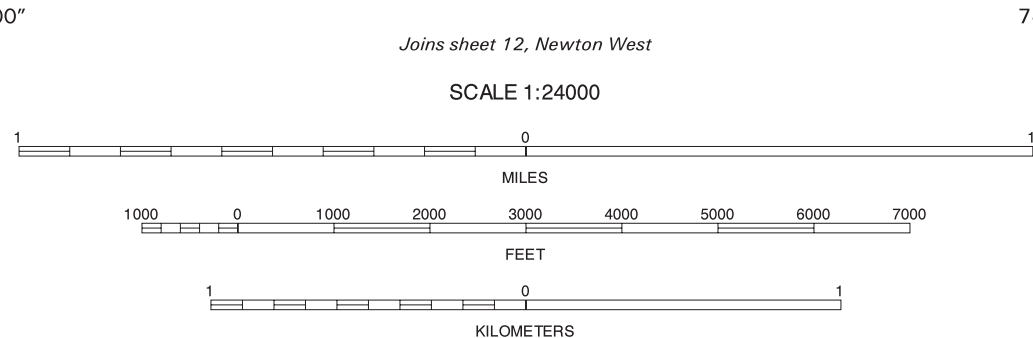
Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.





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North American Datum of 1983 (NAD83), GRS-80 Spheroid  
1000-meter ticks; Universal Transverse Mercator, zone 18.  
Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



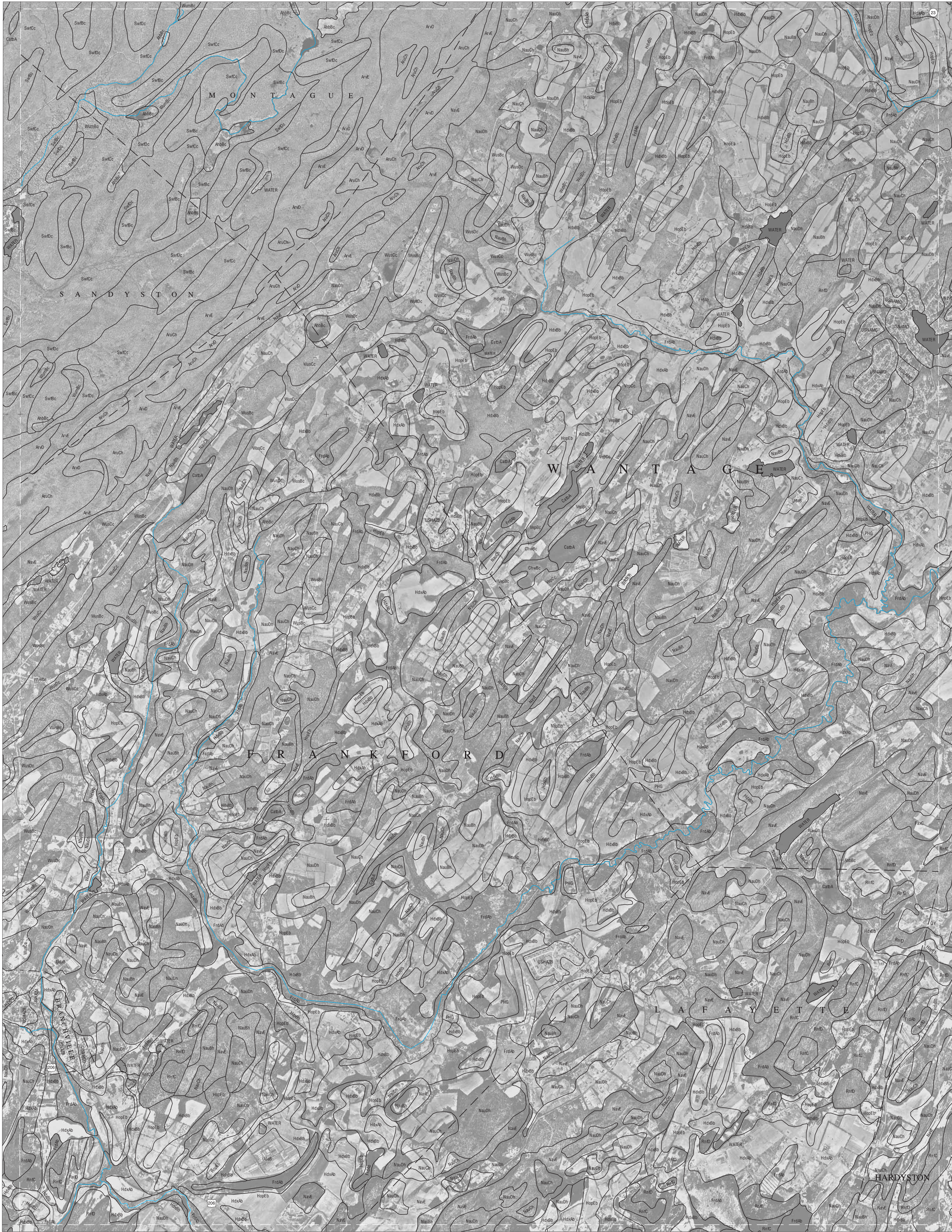
1	2	3
4	5	6
7	8	9

1 MILFORD  
2 PORT JERVIS SOUTH  
3 LAKE MASKENOZHA  
4 BRANCHVILLE  
5 FLATBROOKVILLE  
6 NEWTON WEST  
7 NEWTON EAST

CULVERS GAP, NEW JERSEY  
7.5 MINUTE SERIES  
SHEET NUMBER 6 OF 18

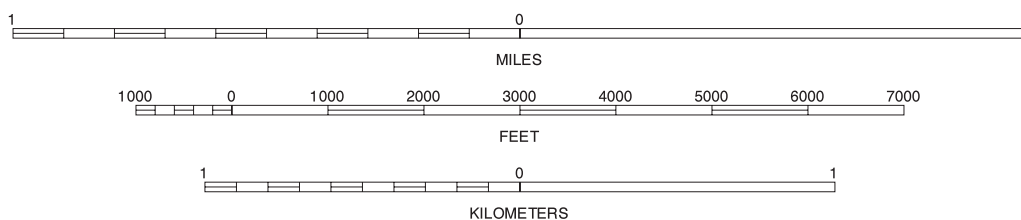
Soil map delineations extending beyond the dashed white quadrangle neartline are for reference only and are included on adjacent map sheets.





This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Soil lines were compiled on orthophotographs prepared by the U.S. Department of the Interior, Geological Survey, from 1991 (1:24,000) aerial photography. Soil names and descriptions were approved in 2002. The photo background for this map is an orthophotograph prepared by the U.S. Department of the Interior, Geological Survey, from 1995-1997 aerial photography. Hydrographic lines were developed by NRCS - New Jersey as a navigational aid, and should not be used for any other purpose.

North American Datum of 1983 (NAD83), GRS-80 Spheroid  
1000-meter ticks; Universal Transverse Mercator, zone 18.  
Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



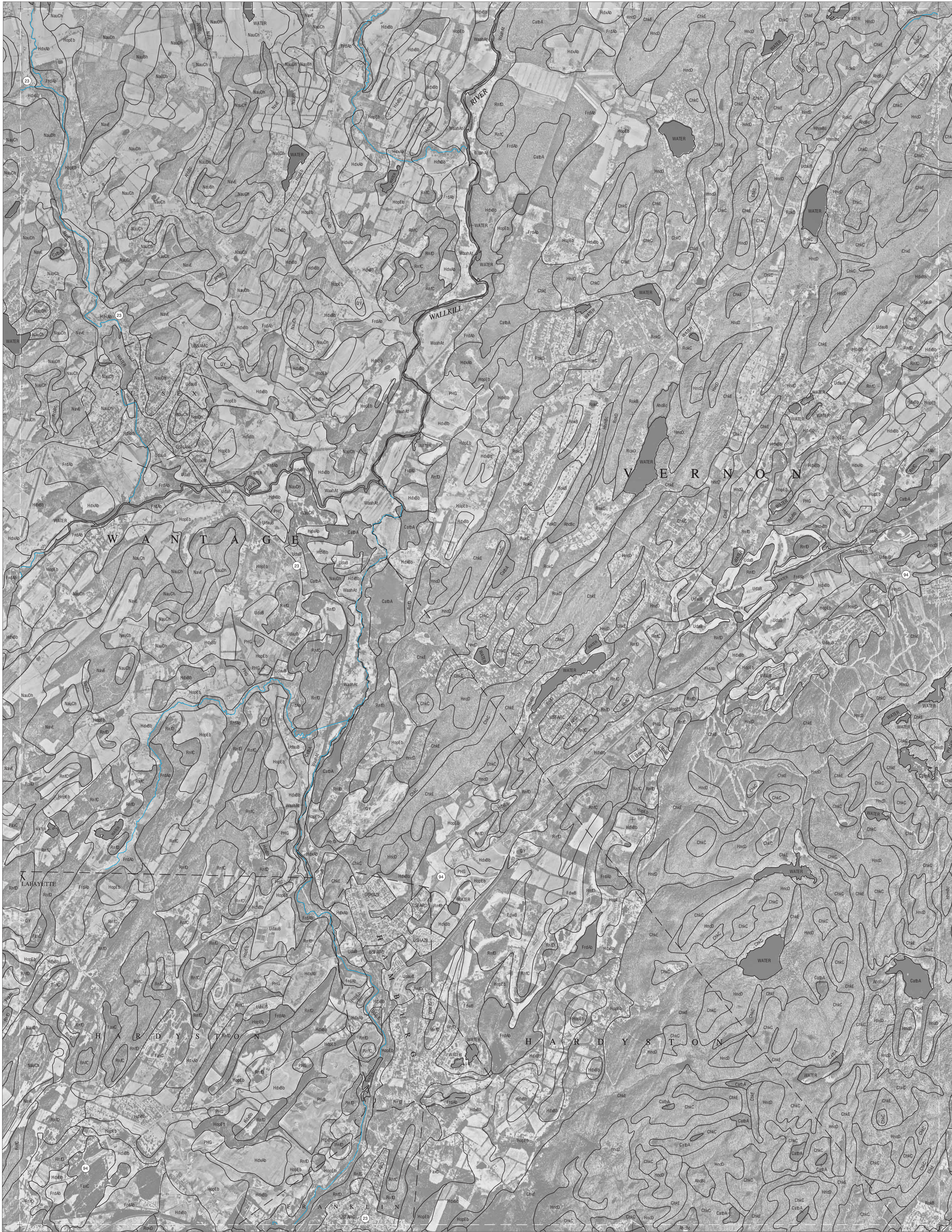
1	2	3
6	8	
12	13	14

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BRANCHVILLE, NEW JERSEY  
7.5 MINUTE SERIES  
SHEET NUMBER 7 OF 18

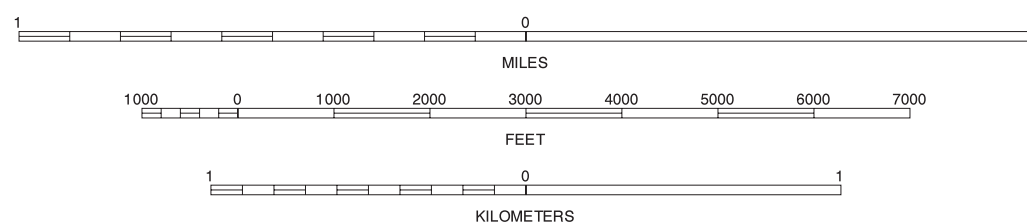
Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.





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North American Datum of 1983 (NAD83), GRS-80 Spheroid  
1000-meter ticks; Universal Transverse Mercator, zone 18.  
Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



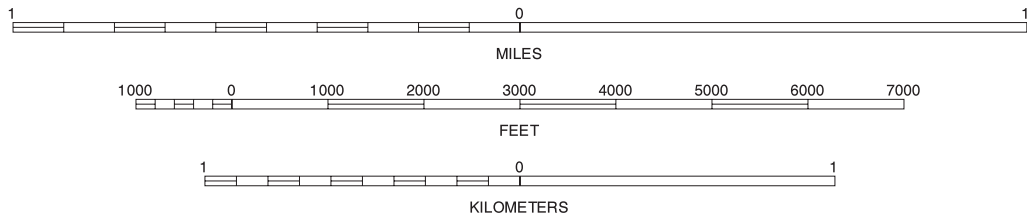
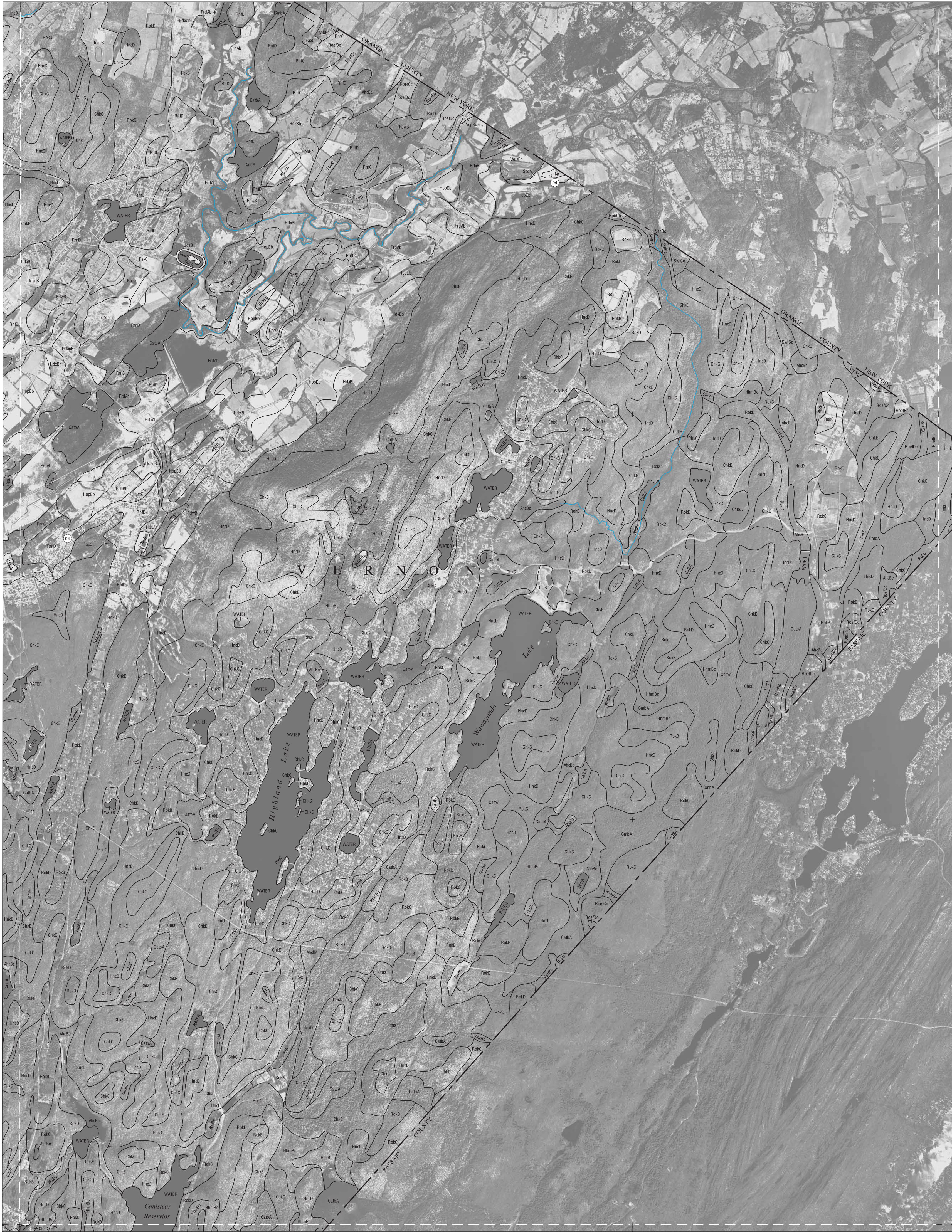
2	3	4
7	8	9
13	14	15

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HAMBURG, NEW JERSEY  
7.5 MINUTE SERIES  
SHEET NUMBER 8 OF 18

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.





3	4	5
8	9	10
14	15	16

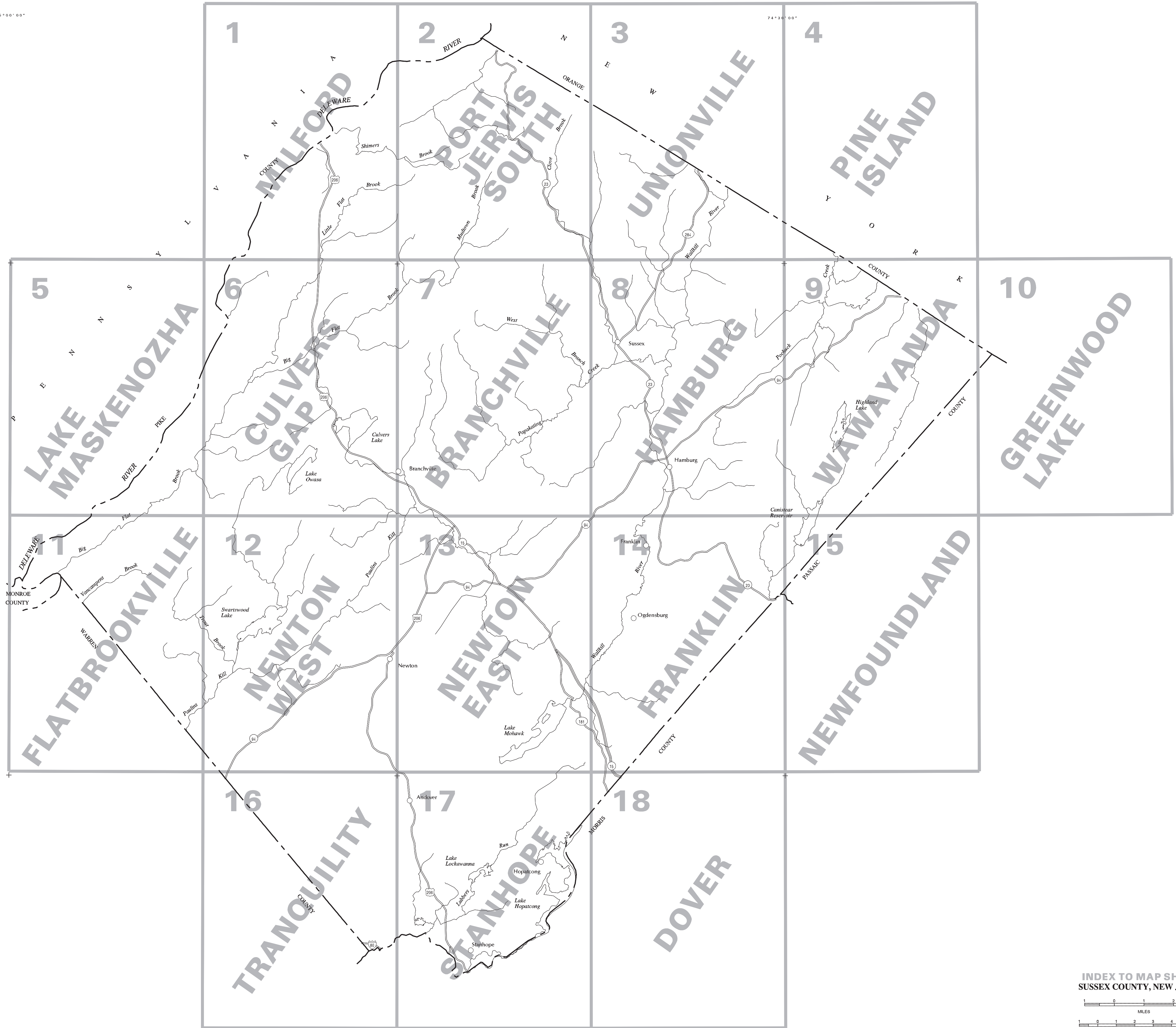
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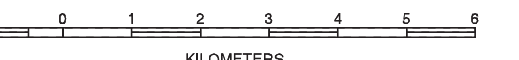
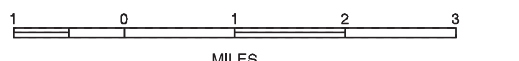
75°00'00"

41°15'00"

41°00'00"



INDEX TO MAP SHEETS  
SUSSEX COUNTY, NEW JERSEY



SCALE = 1:110000

LEGEND

SYMBOL	NAME
RnD	Rock outcrop-Farmington-Gateway complex, 15 to 35 percent slopes
RoefBc	Rockaway loam, thin fragipan, 0 to 8 percent slopes, extremely stony
RoefCc	Rockaway loam, thin fragipan, 8 to 15 percent slopes, extremely stony
RoefDc	Rockaway loam, thin fragipan, 15 to 35 percent slopes, extremely stony
RoB	Rockaway-Chatfield-Rock outcrop complex, 0 to 8 percent slopes
RokC	Rockaway-Chatfield-Rock outcrop complex, 8 to 15 percent slopes
RokD	Rockaway-Chatfield-Rock outcrop complex, 15 to 35 percent slopes
RoBb	Rockaway-Urban land complex, thin fragipans, 0 to 8 percent slopes
RokD	Rockaway-Urban land complex, thin fragipans, 0 to 15 percent slopes
RokC	Rockaway-Urban land complex, thin fragipans, 0 to 25 percent slopes
ScOA	Scio silt loam, 0 to 3 percent slopes
SwfBc	Swartswood loam, 0 to 8 percent slopes, extremely stony
SwfCc	Swartswood loam, 8 to 15 percent slopes, extremely stony
SwfDc	Swartswood loam, 15 to 35 percent slopes, extremely stony
UccAs	Udalluents, 0 to 3 percent slopes, occasionally flooded
UdaB	Udortments-Urban land complex, smoothed
UdaB	Udortments-Urban land complex, 0 to 8 percent slopes
UnrA	Unadilla silt loam, 0 to 3 percent slopes
UnrA	Unadilla silt loam, 3 to 8 percent slopes
USCHRB	Urban land-Chatfield-Rock outcrop complex, 0 to 8 percent slopes
USCHRC	Urban land-Chatfield-Rock outcrop complex, 0 to 15 percent slopes
USCHRD	Urban land-Chatfield-Rock outcrop complex, 0 to 35 percent slopes
USFARC	Urban land-Farmington-Rock outcrop complex, 0 to 15 percent slopes
USFARD	Urban land-Farmington-Rock outcrop complex, 0 to 35 percent slopes
USFAVB	Urban land-Farmington-Massaic complex, 0 to 8 percent slopes
USHAZA	Urban land-Hazen-Hoosic complex, 0 to 3 percent slopes
USHAZB	Urban land-Hazen-Hoosic complex, 0 to 8 percent slopes
USNMAB	Urban land-Nassau-Manlius complex, 0 to 8 percent slopes
USNAMC	Urban land-Nassau-Manlius complex, 0 to 15 percent slopes
USNAMD	Urban land-Nassau-Manlius complex, 0 to 25 percent slopes
USWUSB	Urban land-Wurtsboro-Swartswood complex, 0 to 8 percent slopes
VeBc	Venango silt loam, 0 to 8 percent slopes, extremely stony
VeCc	Venango silt loam, 8 to 15 percent slopes, extremely stony
WaaiAt	Walkit silt loam, 0 to 3 percent slopes, frequently flooded
WaBbB	Walpack, fine sandy loam, aeolian mantle, 0 to 8 percent slopes, very stony
WaBb	Walpack, fine sandy loam, aeolian mantle, 8 to 15 percent slopes, very stony
WaBb	Walpack, fine sandy loam, aeolian mantle, 15 to 35 percent slopes, very stony
WacB	Walpack silt loam, 3 to 8 percent slopes
WacBc	Walpack silt loam, 3 to 8 percent slopes, extremely stony
WacC	Walpack silt loam, 8 to 15 percent slopes
WacCc	Walpack silt loam, 8 to 15 percent slopes, extremely stony
WacD	Walpack silt loam, 15 to 25 percent slopes
WacDc	Walpack silt loam, 15 to 35 percent slopes, extremely stony
WATER	Water
WecBc	Weisboro silt loam, 0 to 8 percent slopes, extremely stony
WecCc	Weisboro silt loam, 8 to 15 percent slopes, extremely stony
WumBc	Wurtsboro loam, 0 to 8 percent slopes, extremely stony
WusBc	Wurtsboro-Swartswood complex, 0 to 8 percent slopes, extremely stony
WusCc	Wurtsboro-Swartswood complex, 8 to 15 percent slopes, extremely stony
WusDc	Wurtsboro-Swartswood complex, 15 to 35 percent slopes, extremely stony

CONVENTIONAL AND SPECIAL  
SYMBOLS LEGEND

CULTURAL FEATURES

BOUNDARIES

National, state, or province

County or parish

Reservation (national forest or park,  
state forest or park)

Field sheet matchline & neckline

ROAD EMBLEMS AND DESIGNATIONS

Interstate

Federal

State

HYDROGRAPHIC FEATURES

STREAMS

Perennial, double line

Unclassified stream

SPECIAL SYMBOLS FOR SOIL  
SURVEY AND SSURGO

SOIL DELINEATIONS AND SYMBOLS

AhBbC<RoefBc

LANDFORM FEATURES

MISCELLANEOUS SURFACE FEATURES

Sandy spot

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